Weston Solutions, Inc.
Suite 500
750 East Bunker Court
Vernon Hills, IL 60061-1450
847-918-4000 • Fax 847-918-4055
www.westonsolutions.com

16 January 2004

Mr. Scott Hansen
Work Assignment Manager
U.S. Environmental Protection Agency
77 West Jackson Blvd.
Chicago, IL 60604

U.S. EPA Contract No.: 68-W7-0026
Work Assignment No.: 148-ROBE-05BN
Document Control No.: RFW148-2A-AOPI

Re: Oversight Report for Lenz Oil Site, Lemont, Illinois

Dear Mr. Hansen:

Weston Solutions, Inc. (WESTON®) is pleased to submit the oversight report for the Lenz Oil Site, Lemont , Illinois. The oversight report is for the period from 10 September through 17 December 2003.

The attached oversight report provides WESTON's summary of the daily observations of the PRP's field activities, copies of field notes, and photo-documentation of field activities.

If you have questions, please call me at (847) 918-4051.

Very truly yours,

WESTON SOLUTIONS, INC.

Omprakash S. Patel
Site Manager

PERIODIC OVERSIGHT REPORT
LENZ OIL
LEMONT, ILLINOIS

January 2004

Prepared for:

U.S. Environmental Protection Agency

Work Assignment No.:148-ROBE-05BN
Document Control No.:RFW148-2A-AOPI

OVERSIGHT OF PRE-DESIGN FIELD INVESTIGATION
LENZ OIL
LEMONT, ILLINOIS

This report summarizes the field oversight for the pre-design field investigation by Conestoga-Rovers and Associates (CRA) at Lenz Oil, Lemont, Illinois. Weston Solutions, Inc. (WESTON®) provided oversight for the pre-design field investigations performed by CRA. One WESTON personnel was present on-site during the pre-design field investigations. Photo documentation and copies of field log book are attached.

10 September 2003

The following personnel were presenton-site:

Name	Affiliation
Walter Pochron	CRA
Jeff Kolodziejski	CRA
Yoshie Hagiwara	WESTON

Well inventory for all the existing wells were completed. A few wells on Tameling property (property owned by a private owner located south of the site) had to be located using metal detector and dug up because they were deeply buried. These wells included wells P-24, P-25S and P-25. During the well inventory activities, MW-6S, a flush-mount well in the middle of a plowed field, was observed to be filled with mud and silt with obstruction at approximately 1.2 feet below the top of casing (TOC). In addition, per Mr. Tameling, well P-26 maybe compromised because one of their heavy equipments hit the well and bent it. They brought it back to the original shape/ location, but the inner casing may be bent, and therefore difficult to develop P-26. Water level measurements and product (LNAPL) thickness information was collected using an electrical-sounding oil/water interface indicator.

17 September 2003

The following personnel were present on-site:

Name	Affiliation
Walter Pochron	CRA
Sarah Benovic	CRA

Name	Affiliation
Yoshie Hagiwara	WESTON

CRA performed well development activities on the following wells:

- MW-1S
- MW-1D
- G101M
- G101D
- MW-2S
- MW-2D

Stainless steel bailers were used to surge all the wells. Wells were purged using one of the following:

- Stainless-steel Bailer
- Whaler pump
- Peristaltic pump

New locks were installed on all the wells that were sampled on 17 September 2003.

When a pump and tubing was used, CRA inserted the poly-tubing back down the well after well development was completed. Normally if the tubing stays in the well it should be made of Teflon or equivalent to both minimize any reaction with contaminated water and prevent sorption of contaminants on to the tubing.

No deviation from work plan was observed.

18 September 2003

The following personnel were present on-site.

Name	Affiliation
Walter Pochron	CRA
Sarah Benovic	CRA
Yoshie Hagiwara	WESTON

CRA performed well development activities on the following wells:

- MW-4S
- MW-4D
- MW-3S
- MW-3D
- MW-6D
- MW-7S
- MW-7D

MW-6S could not be developed due to a large amount of silt in the well. Walt Pochron said that MW-6S will be developed at a later date.

In the morning there was a problem with the water quality meter used to monitor for parameter stabilization. A new water quality meter was delivered at the site by CRA.

Stainless steel bailers were used to surge all the wells. Wells were purged using one of the following:

- Bailer
- Whaler pump
- Peristaltic pump

New locks were installed on all the wells that were sampled on 18 September 2003.

No deviation from work plan was observed.

2 October 2003

The following personnel were present on-site:

Name	Affiliation
Jeff Kolodziejski	CRA
Sarah Benovic	CRA
Yoshie Hagiwara	WESTON

The water levels and LNAPL measurements were collected using an electrical-sounding oil/water interface probe. At those wells where no LNAPL was observed, CRA also collected the total depth of each well. Some of the total well depth measurements appeared questionable, however, all the water level and product thickness measurements appeared to have been collected in accordance with the work plan. While at MW-1S and MW-1D area, CRA identified a problem with the interface probe. It was suspected that the problem was due to low-battery. CRA went off site to purchase and replace the battery. Once the new batteries were installed, no further problems were observed using the interface probe.

21 October 2003

The following personnel were present on-site.:

Name	Affiliation
Sarah Benovic	CRA
Walt Pochron	CRA
Mike Mueller	Boart Longyear-Driller
Ben Price	Boart Longyear- Helper
Wess Inhoff	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

CRA attempted to redevelop well MW-6S. MW-6S was found to contain excess amount of silts during the well inventory activities in September 2003. However, CRA was unable to redevelop the well because the well screen was bent, and therefore, the monitoring well may not be appropriate to use as a monitoring well.

CRA proceeded to install soil borings. The following soil borings were installed and sampled on 21 October 2003:

- SB-1-03 (drilled to 12 ft bgs)
- SB-2-03 (drilled to 10 ft bgs)
- SB-3-03 (drilled to 10 ft bgs)
- SB-4-03 (drilled to 12 ft bgs)
- SB-5-03 (drilled to 6 ft bgs)

No deviation from work plan was observed.

22 October 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Mike Mueller	Boart Longyear-Driller
Ben Price	Boart Longyear- Helper
Wess Inhoff	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

The following soil borings were installed and sampled on 22 October 2003:

- SB-6-03 (drilled to 10 ft bgs)
- SB-7-03 (drilled to 6.5 ft bgs; above water table)
- SB-8-03 (drilled to 5 ft bgs; above water table)
- SB-9-03 (drilled to 13 ft bgs)
- SB-10-03 (drilled to 14 ft bgs)

At SB-7-03 and SB-8-03, refusal was encountered above the water table. Based on the depth of refusal WESTON thought that this was too shallow for bedrock refusal. No water appeared to be present at SB-10-03 (which was drilled down to 14 ft bgs).

No deviation from work plan was observed.

23 October 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Mike Mueller	Boart Longyear-Driller
Ben Price	Boart Longyear- Helper
Wess Inhoff	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

The following soil borings were installed and sampled on 23 October 2003:

- SB-11-03 (drilled to 3 ft bgs; above water table, no sample collected)
- SB-11-03A (drilled to 11 ft bgs;)
- SB-7-03A (drilled to 10.5 ft bgs)
- SB-8-03A (drilled to 10.5 ft bgs)

The following soil boring/ piezometer was installed and sampled on 23 October 2003:

- PZ-33 (drilled to 15.5 ft bgs)

Per U.S. EPA's request, CRA went back to re-drill at SB-7-03, SB-8-03, and SB-11-03 locations where shallow refusal was encountered. Mr. Scott Hansen of U.S. EPA was on-site for site visit for portion of the day. Temporary piezometer PZ-33 was screened at 5.5 to 15.5 ft bgs.

No deviation from work plan was observed.

24 October 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Mike Mueller	Boart Longyear-Driller

Name	Affiliation
Ben Price	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

The following soil borings were installed and sampled on 24 October 2003:

- SB-12-03 (drilled to 8.1 ft bgs)
- SB-13-03 (drilled to 12 ft bgs;)
- SB-14-03 (drilled to 6.2 ft bgs; above water table)
- SB-15-03 (drilled to 4 ft bgs; above water table)

A strong odor was noted in the 4 to 6 ft core obtained from the boring SB-14-03. This boring did not appear to have reached the smear zone. Later, CRA decided to install another soil boring approximately 10 feet south of SB-14-03.

No deviation from work plan was observed.

27 October 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Walt Pochron	CRA
Mike Mueller	Boart Longyear-Driller
Ben Price	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

The following soil borings/ piezometers were installed and sampled on 27 October 2003:

- PZ-34 (drilled to 17 ft bgs)
- PZ-35 (drilled to 17 ft bgs)
-

Temporary piezometers PZ-34 and PZ-35 were both screened at 6 to 16 ft bgs.

No deviation from work plan was observed.

28 October 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Mike Mueller	Boart Longyear-Driller
Ben Price	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

The following soil borings were installed and sampled on 28 October 2003:

- SB-16-03 (drilled to 10 ft bgs)
- SB-17-03 (drilled to 8 ft bgs)

The following soil boring/ piezometer was installed and sampled on 28 October 2003:

- PZ-36 (drilled to 18 ft bgs)

Temporary piezometer PZ-36 was screened at 7 to 17 ft bgs.

No deviation from work plan was observed.

29 October 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Mike Mueller	Boart Longyear-Driller
Ben Price	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

The following soil borings/ piezometers were installed and sampled on 29 October 2003:

- PZ-37 (drilled to 16 ft bgs)
- PZ-38 (drilled to 15 ft bgs)

Temporary piezometers PZ-37 and PZ-38 were screened at 5.5 to 15.5 ft bgs and 4 to 14 ft bgs, respectively.

No deviation from work plan was observed.

30 October 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Mike Mueller	Boart Longyear-Driller
Ben Price	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

The following soil borings were installed and sampled on 30 October 2003:

- SB-18-03 (drilled to 7 ft bgs)
- SB-19-03 (drilled to 10 ft bgs)
- SB-20-03 (drilled to 10 ft bgs)

The following soil boring/ piezometer was installed and sampled on 30 October 2003:

- PZ-39 (drilled to 15 ft bgs)

Temporary piezometer PZ-39 was screened at 5 to 15 ft bgs.

No deviation from work plan was observed.

31 October 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Walt Pochron	CRA
Mike Mueller	Boart Longyear-Driller
Ben Price	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

CRA abandoned the unusable monitoring well MW-6S by pulling out the well screen and riser and filling with bentonite. A replacement well RMW-6S was installed approximately five feet south of the original MW-6S location. RMW-6S was screened at 2 to 12 ft bgs (water appeared to be present at approximately 5 to 6 ft bgs at the time of drilling). Stainless steel screen and riser were used to construct well RMW-6S. Per request by the property owner, the well RMW-6S was completed as a flush-mounted well.

CRA also developed temporary piezometers PZ-33, PZ-35, PZ-36, PZ-37 and PZ-38 by purging approximately five gallons of water with weighted plastic bailers. During the development, Walt Pochron of CRA noted that PZ-37 may have been installed too deep to monitor for LNAPL.

No deviation from work plan was observed.

3 November 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Mike Mueller	Boart Longyear-Driller
Wess Inhoff	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

The following soil boring/ piezometer was installed and sampled on 3 November 2003:

- PZ-40

Temporary piezometer PZ-40 was screened at 3 to 13 ft bgs.

CRA developed temporary piezometer PZ-34 by purging approximately five gallons of water with weighted plastic bailers. In addition, CRA purged approximately 15 gallons of water out of RMW-6S for well development purposes using a whale pump. WESTON field personnel notified some deviations from the work plan to CRA. CRA decided to redevelop RMW-6S because several problems were identified. Well redevelopment activity did not take place on 3 November 2003 because a new water quality meter had to be brought on site.

No deviation from work plan was observed.

4 November 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Walt Pochron	CRA
Mike Mueller	Boart Longyear-Driller
Wess Inhoff	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

Due to the heavy rains, access to PZ-41 was difficult. CRA decided to start on VER pilot test wells.

The following wells were installed on 4 November 2003:

- VP-4 (drilled to 11 ft bgs)
- VER-1 (drilled to 17-17.5 ft bgs)

Vapor monitoring point VP-4 was screened at 6 to 11 ft bgs. VER-1 was screened at 6 to 16 ft bgs. CRA collected some samples for laboratory analysis of required parameters (for VER area soil). However, CRA was unable to collect samples for soil stability/ treatability test because the soil

cuttings were too wet. Installation of VER-1 caused some problems, and therefore, the installation process was carried over to 5 November 2003.

No deviation from work plan was observed.

5 November 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Wess Inhoff	Boart Longyear-Driller
Leon Grosskreutz	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

The installation of VER-1 was completed on 5 November 2003.

In addition, the following vapor monitoring probes were installed on 5 November 2003:

- VP-1 (drilled to 12 ft bgs)
- VP-3 (drilled to 12 ft bgs)
- VP-2 (drilled to 11.5 ft bgs)

Vapor monitoring points VP-1, VP-3 and VP-2 were screened at 6 to 11 ft bgs.

CRA did not calibrate the air monitoring instruments (PID and particulate meter) in the morning, and failed to monitor breathing zone. Upon communications of the problem by WESTON, CRA immediately took corrective action and started air monitoring. It should be noted that appropriate air monitoring was not conducted until later after WESTON personnel discussed the problem of lack of monitoring during well installation when the hazard from vapors was apparently present at VP-2, where LNAPL had floated to the surface during the well installation process.

6 November 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Walt Pochron	CRA
Mike Mueller	Boart Longyear-Driller
Wess Inhoff	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

The following wells were installed on 6 November 2003:

- VP-8 (drilled to 11 ft bgs)
- VP-5 (drilled to 11 ft bgs)
- VER-2 (drilled to 17.5 ft bgs)
- VP-7 (drilled to 11 ft bgs)

Vapor monitoring points VP-8, VP-5 and VP-7 were screened at 5.5 to 10.5ft bgs. VER-2 was screened at 5.5 to 15.5 ft bgs.

CRA collected soil samples from VER-2, VP-8 and VP-7 for laboratory analysis and soil stabilization/ treatability test.

CRA also developed temporary piezometers PZ-39 and PZ-40 by purging approximately five gallons of water with weighted plastic bailers. CRA also redeveloped RMW-6S in accordance with the work plan and purged additional 15 gallons of water from the well.

No deviation from work plan was observed.

7 November 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Mike Mueller	Boart Longyear-Driller
Scott Schwerin	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

The following well was installed on 7 November 2003:

- VP-6 (drilled to 11 ft bgs)

Vapor monitoring points VP-6 was screened at 5.5 to 10.5ft bgs.

The following soil boring/ piezometer was installed on 7 November 2003:

- PZ-40(drilled to 13.5 ft bgs)

Temporary piezometer PZ-41 was screened at 2 to 12 ft bgs. No samples for laboratory analysis was collected due to excess moisture at this location.

CRA also attempted to re-drill near VER-1 location to obtain soil samples for soil stability/ treatability test, however, after drilling at several boring locations, CRA decided not to proceed further due to excess moisture in the area (slurry).

No deviation from work plan was observed.

10 November 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Wendy Best	CRA
Christie Gerges	CRA
Michael Castillo	WESTON

Groundwater level measurements from all existing monitoring wells were taken from 10 to 11 November 2003. During these activities, CRA completed the following tasks according to protocol.

Groundwater level measurements were recorded but not completed. CRA stated that longer water level measurement times were due to the presence of light non-aqueous phase liquids (LNAPLs) in several wells which had increased the decontamination time. Depth to water, total well depth, and, where applicable, LNAPL thickness were recorded at each well. Decontamination procedures of the oil/water interface probe included a rinse in alconox and water after each use. Where LNAPL was observed, decontamination included an extra rinse in 70% isopropyl rubbing alcohol.

Groundwater samples from all monitoring wells were collected from 10 to 14 November 2003. During these activities, CRA completed the following tasks according to protocol.

Monitoring wells sampled included G101D and G101M. Groundwater was collected from the midpoint depths of the well's screened interval utilizing a parastaltic pump combined with either dedicated or new tygon/masterflex tubing. Sampling depths within each well were determined from well logs present on sight. Purge rates, in milliliters per minute (mL/min), drawdown, in feet, and stabilization parameters were monitored and recorded. Purge rates were estimated with a graduated cylinder and stopwatch and limited to <500 mL/min. Drawdown was monitored with a water level indicator and restricted to <0.3 feet. Stabilized parameters were monitored with a calibrated Yellow Springs Instruments 560 Multi Probe System (YSI) meter and 2100P Turbidimeter unit at time intervals of approximately 4 minutes. Readings continued until parameters were stabilized within their respective limits for three consecutive readings. Parameters and limits included temperature (+/- 0.5 C), pH (+/- 0.1), specific conductivity (+/- 10% mS/cm), oxygen reduction potential (+/- 10% mV), dissolved oxygen (mg/L), and turbidity (+/- 10% or <10 NTUs). Calibration of the YSI was completed prior to groundwater sampling activities on a daily basis. Decontamination procedures of stabilizing equipment were completed similar to those mentioned above.

Groundwater samples were collected from monitoring wells G101D and G101M. Sampling parameters included the following:

- TCL VOCs
- TCL SVOCs

- TCL Pesticides
- TCL Herbicides
- TAL Metals
- PCBs
- Cyanide
- Alkalinity
- Total COD
- Dissolved COD (groundwater filtered through 0.45 micrometer filter unit)
- TOC
- Ammonia (as nitrogen)
- Nitrate
- TSS
- TDS
- Chloride
- Sulfate
- Sulfide
- Natural attenuation parameters

Natural attenuation parameters were measured for several monitoring wells including those sampled today. Location of these wells consisted of up-gradient, down-gradient, cross-gradient, and within the known contaminant area. The presence of Iron (Fe) or Manganese (Mn) was determined utilizing on-site Fe and Mn test kits. Results of these tests were available in minutes and recorded in the field log book. Concentrations of Fe ranged from 0 to 2 mg/L, while Mn was not detected at both sampling points.

Immediately following groundwater sample collection, samples were labeled and stored on ice. When daily groundwater activities were completed, samples were packed in coolers for shipping with temperature blanks. Sample custody was recorded using a chain of custody prior to shipment to Severn Trent Laboratories, Inc (STL) in Pennsylvania for analysis.

11 November 2003

The following personnel were present on-site:

Name	Affiliation
Walt Pochron	CRA
Sarah Benovic	CRA
Wendy Best	CRA
Christie Gerges	CRA
Michael Castillo	WESTON

Groundwater level measurements from all existing monitoring wells were taken from 10 to 11 November 2003. During these activities, CRA completed the following tasks according to protocol.

Groundwater level measurements, including depth to water, total depth, and LNAPL thickness were recorded and completed according to activities described on 10 November 2003. Decontamination of the oil/water interface was completed appropriately after each use.

Groundwater samples were collected from monitoring wells MW-1S, MW-1D, MW-3S, MW-3D, MW-6S, and MW-6D. The samples were analyzed for parameter listed in 10 November 2003 daily summary. Calibration of the YSI meter and the turbidimeter was completed prior to groundwater sampling activities. Groundwater was purged and monitored for both drawdown and stabilization parameters. Testing for Fe and Mn was completed on all monitoring wells listed above. Concentrations of Fe ranged from 0 to 3.4 mg/L, while Mn was not detected. Decontamination procedures of stabilizing equipment were completed. Field activities were completed according the methodology described on 10 November 2003.

Immediately following groundwater sample collection, samples were labeled and stored on ice. When daily groundwater activities were completed, samples were packed in coolers for shipping with temperature blanks. Sample custody was recorded using a chain of custody prior to shipment to Severn Trent Laboratories, Inc (STL) in Pennsylvania for analysis.

12 November 2003

The following personnel were present on-site:

Name	Affiliation
Walt Pochron	CRA
Sarah Benovic	CRA

Name	Affiliation
Wendy Best	CRA
Christie Gerges	CRA
Michael Castillo	WESTON

Groundwater samples were collected from monitoring wells MW-2S, MW-2D, MW-7S, MW-7D, MW-4S, MW-4D, and MW-8S. The samples were analyzed for parameters listed in 10 November 2003 daily summary excluding natural attenuation. Testing for Fe and Mn was not performed on the wells listed above. Calibration of the YSI meter, Micro Purge Basic Model MP20 stability meter, and turbidimeter was completed prior to groundwater sampling activities. Groundwater was purged and monitored for both drawdown and stabilization parameters. Decontamination procedures of stabilizing equipment were completed. Field activities were completed according to the methodology described on 10 November 2003.

Immediately following groundwater sample collection, samples were labeled and stored on ice. When daily groundwater activities were completed, samples were packed in coolers for shipping with temperature blanks. Sample custody was recorded using a chain of custody prior to shipment to Severn Trent Laboratories, Inc (STL) in Pennsylvania for analysis.

Development from VER wells and vapor monitoring points were completed on 12 November 2003 in preparation vacuum enhanced remediation.

Development of VER wells, VER-1 and VER-2, were completed with a Whale pump. Prior to purging the wells, they were surged by vigorously raising and lowering the Whale pump to disturb settled silt accumulated on the bottom of the VER points. Approximately 20-30 gallons were purged from the VER wells, when silt content was observed to be significantly lowered. Similar development of vapor points, VMP-1, was also completed utilizing a parastaltic pump.

13 November 2003

The following personnel were present on-site:

Name	Affiliation
Sarah Benovic	CRA
Wendy Best	CRA
Christie Gerges	CRA
Michael Castillo	WESTON

Groundwater samples were collected from monitoring wells G102-L, P-26, P-29, P-28, P-30, and G106D. The samples were analyzed for parameters listed in 10 November 2003 daily summary. Calibration of the YSI meter and the turbidimeter was completed prior to groundwater sampling activities. Groundwater was purged and monitored for both drawdown and stabilization parameters. Testing for Fe and Mn was completed on all wells listed above. Concentrations of Fe ranged from 0.6 to 6.0 mg/L, while Mn was not detected. Decontamination procedures of stabilizing equipment were completed. Field activities were completed according the methodology mentioned on 10 November 2003.

Immediately following groundwater sample collection, samples were labeled and stored on ice. When daily groundwater activities were completed, samples were packed in coolers for shipping with temperature blanks. Sample custody was recorded using a chain of custody prior to shipment to Severn Trent Laboratories, Inc (STL) in Pennsylvania for analysis.

14 November 2003

The following personnel were present on-site:

Name	Affiliation
Walt Pochron	CRA
Sarah Benovic	CRA
Wendy Best	CRA
Christie Gerges	CRA
Michael Castillo	WESTON

Groundwater samples were collected on 12 November 2003 from monitoring wells MW-5D, MW-5S, and P-19. The samples were analyzed for parameters listed in 10 November 2003 daily summary. Natural attenuation parameters were analyzed for P-19. Concentrations of Fe 3.0 mg/L, while Mn was not detected. Calibration of the YSI meter, Micro Purge Basic Model MP20 stability meter, and turbidimeter was completed prior to groundwater sampling activities. Groundwater was

purged and monitored for both drawdown and stabilization parameters. Decontamination procedures of stabilizing equipment were completed. Field activities were completed according to the methodology mentioned on 10 November 2003.

Immediately following groundwater sample collection, samples were labeled and stored on ice. When daily groundwater activities were completed, samples were packed in coolers for shipping with temperature blanks. Sample custody was recorded using a chain of custody prior to shipment to Severn Trent Laboratories, Inc (STL) in Pennsylvania for analysis.

17 November 2003

The following personnel were present on-site:

Name	Affiliation
Walt Pochron	CRA
Tim Ree	CRA
Tom Hobday	CRA
Yoshie Hagiwara	WESTON

CRA performed step test at VER-2 after trouble-shooting some initial problems. Towards the end of the step test, a problem with zone of influence was identified. The vapor monitoring wells (VP-5 through VP-8) did not show much change in the pressure (vacuum). Suspecting that the wells may be silted and therefore not conductive enough, CRA decided to perform a quick test the vapor monitoring wells with a bicycle air pump to see if the wells would hold the pressure when air was pumped in. If this was true, CRA would redevelop all the vapor monitoring wells to make sure that silting is not an issue.

No deviation from the work plan was observed.

18 November 2003

The following personnel were present on-site:

Name	Affiliation
Walt Pochron	CRA
Tim Ree	CRA
Tom Hobday	CRA
Yoshie Hagiwara	WESTON

CRA performed a quick pressure test at the vapor monitoring wells VP-5, VP-6 and VP-8 to determine if the wells may be clogged with silt. After the test, CRA proceeded to redevelop all the vapor monitoring points by adding approximately 3 gallons of distilled water, surging the bottom, and purging back the water from the wells using a peristaltic pump. This process yielded a significant amount of silt from VP-5 well, allowing the well to gain almost 2 feet in the total depth. Once all the vapor monitoring wells were redeveloped, CRA proceeded to perform another quick test to determine if a zone of influence could be established at maximum vacuum. The result of this quick test revealed that the VER-2 well produced a large amount of water (approximately 3 gallons per minute). However, there was not enough vapor/gas generated from the aquifer. This problem may be due to excess water in the vadose zone, not allowing any gas/vapor to travel, or the formation is too tight and non-transmissive. From the stratigraphy, it would be most probable that the soil pores are too saturated and therefore the residual soil gas may be replaced by rainwater. CRA decided to stop the pilot testing at least for the time being since any useful data could not be collected. CRA also checked the water levels at the VER-1 area to determine if it would be worthwhile to try performing a test at VER-1. However, after the review of water level measurement data, the CRA engineer determined that the testing would not yield usable data.

No deviation from the work plan was observed.

20 November 2003

The following personnel were present on-site:

Name	Affiliation
Walt Pochron	CRA
Paul Dickerson	Boart Longyear- Driller
Jeff Flaminio	Boart Longyear- Helper
Yoshie Hagiwara	WESTON

CRA performed drilling oversight activity at the Lenz Oil site. Boart Longyear of Schofield, WI performed the HSA drilling. Due to the problem with the accessibility at the site (soft ground due to earlier rain), CRA decided to collect a sample from a location approximately 25 feet south of the VER-1. The auger was advanced to approximately 5 feet bgs, and pulled out to check for the wetness inside the boring. When the auger was pulled out, there was water running down the boring, and the CRA field personnel decided to stop the drilling/sampling effort. It was expected that the soil above the smear zone is too saturated to collect any samples useful for soil stabilization test. As a result, soil stabilization sample was not collected.

No deviation from the work plan was observed.

17 DECEMBER 2003

Following personnel were present on-site:

Name	Affiliation
Jeff Kolodziejski	CRA
Tim Ree	CRA
Marissa Pihl	WESTON

WESTON provided oversight of water level measurements and LNAPL thickness measurements at the existing monitoring well and piezometer network. The field activity was conducted by CRA. Water level measurements were observed and recorded at 62 monitoring wells and piezometers. CRA used an oil/water interface probe to record all measurements. All measurements were read at the top of casing of the well. The water level of the Des Plaines River was also observed and recorded from a staff guage installed in the river. LNAPL thickness, where ever present, was also observed and recorded. CRA performed decontamination between each well using deionized water and Alconox if no LNAPL was present. If LNAPL was present DI water and alcohol was utilized for decontamination.

No air monitoring was conducted. A petroleum odor was observed at P-24, upon opening the well.

LNAPL was observed at monitoring points which had historically observed presence of LNAPL. The thickness of LNAPL appeard to be higher than previously measured.

PHOTO-DOCUMENTATION

Bent Well MW-6S. The screen runs off to the side. (10/21/03 08:34)

Impacted weathered bedrock at SB-3-03. (10/21/03; 13:59)

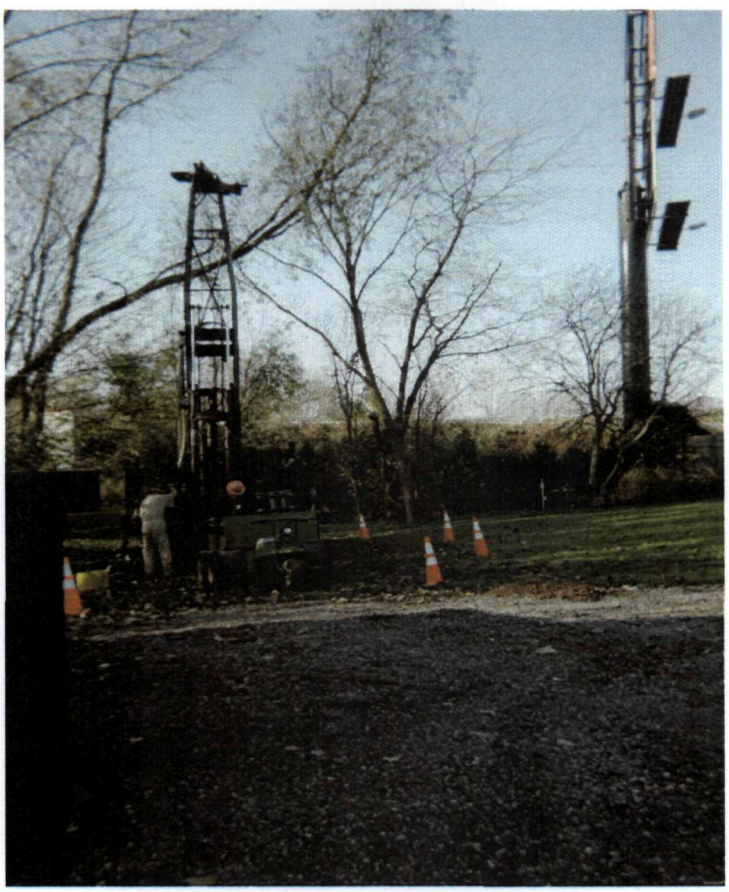
Collecting rinsate blank. (10/21/03; 17:02)

Sending split spoon at SB-9-03. (10/22/03; 12:03)

8 -10 ft and 10-12 ft section cores from SB-10. Front and to the right is the bottom. (10/22/03; 15:46)

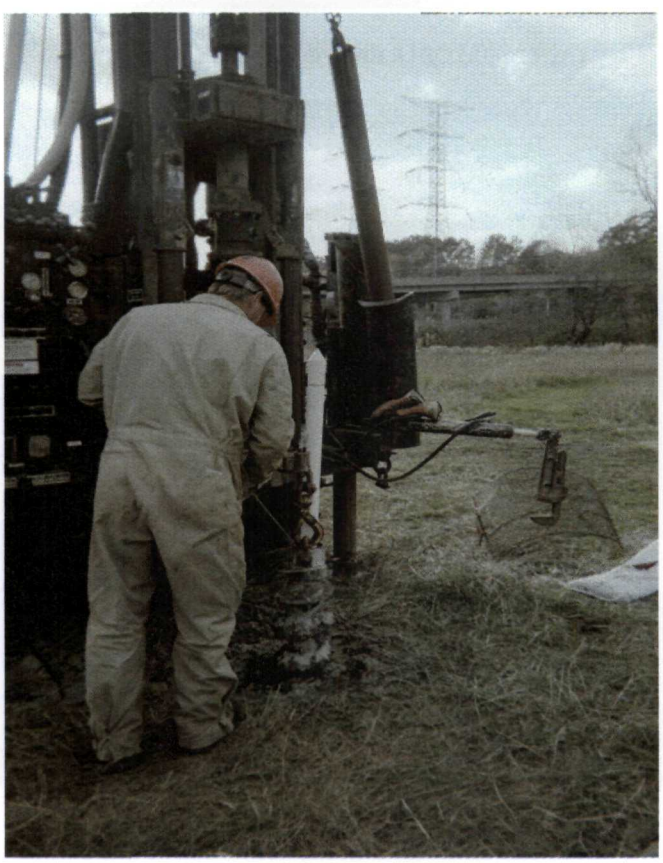
SB-7-03 (left and west) and SB-7-03A (right and east). (10/23/03; 12:30)

Packing sample (8 to 10 ft section) of SB-8-03A in an iced cooler. (10/23/03; 13:20)



Drilling at SB-12-03. (10/24/03; 08:50)

10-12 ft core from Soil Boring SB-13-03. (10/24/03; 10:36)



Setting piezometer at PZ-34. (10/27/03; 15:14)

4 to 6 ft section of PZ-36 (only ~2 inch recovery). (10/28/03; 13:53)

Air-drilling at PZ-37. (10/29/03; 10:18)

Rock core was recovered from the bottom of auger (~10 ft bgs). Competent rock. PZ-37. (10/29/03; 11:29)

Pulling auger out of PZ-38. Oil is seen (light brown) on the auger. (10/29/03; 16:07)

Pulled out stainless steel screen, bent at the top (left). MW-6S. (10/31/03; 08:05)

Setting up at RMW-6 (replacement well). (10/31/03; 08:08)

Well RMW-6S is opened. Standing water present inside and outside of flush-mount casing. (11/3/03; 12:56)

Finished PZ-38 with concrete pad. (11/3/03; 14:40)

Drilling at VP-4. (11/4/03; 09:34)

Soil cuttings are slurry, extremely saturated. VER-1. (11/4/03; 13:11)

Finished VER-1 (left) and VP-4 (right). Still needing cement-seal at the top. (11/5/03; 08:31)

Free product is coming up at VP-2. (11/5/03; 14:19)

Tremie grouting cement-grout at VER-1. (11/5/03; 16:39)

CRA is collecting soil stabilization test samples from VER-2 area. (11/6/03; 08:41)

Drilling at VER-2. CRA is air monitoring. (11/6/03; 11:28)

Collecting samples from VER-2 soil cuttings. (11/6/03; 13:37)

Proposed PZ-41 location. The original boring location would have been under the water if not filled. (11/7/03; 09:39)

Finished temporary piezometer PZ-41. (11/7/03; 11:10)

COPIES OF NOTES FROM FIELD LOG BOOK

Well inventory – Lenz Oil
Sears & Rt. 83 - Lemont
Y. Haginoya 09/10/03

0705 Leave for site. yh
0755 Phoned Om Patel to let him know that Haginoya will be delayed due to traffic. yh
0845 At the site, try to find CRA representatives. Unable to find them. yh
0847 ~~Called (phone) Walt of CRA~~ yh
Called Om Patel to both let him know & also ask what the arrangement is supposed to be. yh
Obtained cell # for Walt of CRA. yh
0850 Tried Walt's cell #, No answer, left a message. yh
0857 Meet w/ Walt & Jeff of CRA. yh
Get an update from CRA on what they have been doing for the past hour. yh
Per CRA, they were in P-25S / P26 area (there are two wells that are flush mount that they had to dig out – the property belongs to a private owner) yh
0932 CRA is going over to locations close to the railroad. yh
SITE ENTRY (cont'd) Per Walt of CRA, they are planning on starting development (well-redevelopment) on Wed. This could potentially extend to Friday of next week. yh
Weather: Sunny, clear humid & warm ~ 80°F
0950 At G101L, D & M. Trying to open wells. yh
0955 CRA will cut the locks open at all three wells. yh
0958 G101L open. The well is stainless steel 2". The outside needs to be repainted, but so far the well appears usable. yh yh

9/ 13

0959 G1=1D open. Checking PID readings. G101M is also open.

1003 G10/M DTW = 19.28 TOC
TD = 26.6 TOC TD
Stickup ~ 3.55 ~~ft~~ ath-ags.

1019 Potential surveyors onsite. CPA's Hagiwara

1022 Asked CRA for calibration information for PID. They calibrated the PID in the office, and did not bring the calibration log w/ them. Per Jeff of CRA, they calibrate PID (Mini Rae) w/ 100 ppm isobutylene. No calibration log is available for today. Requested to have ~~FAXed~~ the log FAXed over to the office.

1035 At P08 location. The concrete pad appears to be in tact. Ants' nest coming out or near the well.

The pad appears to be loose - move around the well.

← pad rotates around the well.

1042 Having a problem w/ PID. PID reading is jumping up and down. They will go ahead and take measurements at P-08. Will calibrate PID again after this well.

Note: All the locks were cut off wells so far. All the wells were secured using a cable tie so that it would be obvious if anybody tampered w/ them before development

Photo log ①

9/10/03

Phot.	Date time
1	9/10/03 0953 At G101 L, D & M. Trying to open wells. Locks are rusty. ——— yz
2	9/10/03 1011. At G101C. Labeled G101C.
3	9/10/03 1104. At P-06. Done. ——— yz
4	9/10/03 1113. Taking PID reading at P-09.
5	9/10/03 1127. Taking well Inventory at MW-1S & 1D. ——— yz
6	9/10/03 1154. Decontaminating water level tape. In the vicinity of G104D & L.
7	9/10/03 13:38. At G102S, behind a Large tree. ——— yz
8	9/10/03 1406. P-28. ——— yz
9	9/10/03 1435. At P-20. Cutting the lock open.
10	9/10/03 1543 At P-23. Trying to open the well. ——— yz ~~DTW = 10.01 TOC No product yz TD = 17.95 TOC very soft bottom yz~~
11	9/10/03 1640 At P-24 or P-24S. Trying to open well cover. ——— yz
12	9/10/03 1653 Digging up P-24. (was buried).
13	9/17/03 0936 Purging G101M. ——— yz
14	9/17/03 1352. Bail / purging at MW-1S.
15	9/17/03 1615 Peristaltic pump Set up at MW-2S. ——— yz
16	9/17/03 1644 Secured (locked) well MW-2S. ——— yz
17	9/17/03 1657 Containerizing ~~purged~~ yz purge water at drum staging area. yz
18	9/18/03 0940 Purging set up at MW-4D.
19	9/18/03 1312 Purging at MW-3S. ——— yz

9/10/08

1049 Jeff of CRA is recalibrating PID while Walt goes to look for next well. Zero-ing the PID w/ fresh air. ——— yz

1050 Finished calibrating PID w/ 100ppm isobutylene. ~100ppm after cal. very jumpy (# all over the place) due to high humidity. yz
Checked the sensitivity w/ sharpie. It responded. ——— yz

1054 At P-07. The well appears usable. pad is a little off the ground CPA making note of soft bottom. ——— yz
The lock was cut at this well as well.

1058 At P-06. Cutting the lock open Again, the pad appears intact, cuts appear to be coming out of below (or side) the pad. ——— yz

1102 Potential surveyors (Bollingbrook ?) off site after site walk. ——— yz

1106 At P-05. Cut the lock open ——— yz
Pad looks ok. ——— yz

1112 At P-09. Cut the lock open ——— yz
stick up etc. appear intact.

Note: the wells G101's had stick up's that were well rusted. ——— yz

1114 ~19 wells are to be sampled per CRA. ——— yz

1117 At MW-4S & 4D. Both stick ups not rusty. ——— yz

1121 Taking DTW at MW-4S. CRA making note of hard bottom. ——— yz

1122 Per CRA, the piezometers have 2' screen

9/10/03

1123 Taking DTW & TD Soft bottom at 48' TOC at MW-4D. ——— yk

1126 At MW-1S & 1D. ——— yk

1128 Taking DTW & TD at MW-1S. Making a note of rusty water. ——— yk

1134 At MW-2S & D. Cutting locks open.

1136 Asked for the exact wells IDs of the ones they ~~did~~ yk dug up this morning prior to Hagiwara's arrival. P2S & P2SS.

1137 CRA making a note of ants inside.
DTW = 12.12 TOC at MW-2D
TD = 45.8 TOC → Soft bottom
Cracked pad at MW-2D. Ants were observed only at MW-2S ——— yk

1141 MW-2S DTW = 11.54 TOC no oil/
~~MW-yk~~ TD = 14.69 TOC

1148 At ~~MW~~ G104D ~~& yk~~ MW-8S.
A big WASP nest inside of MW-8S.
Walt of CRA removed it. ——— yk

1154 Collecting DTW at G104L ——— yk
The pad at G104L appeals heavily weathered/worn. ——— yk

1156 Taking DTW & TD measurements at MW-8S. ——— yk
G104L & G104D are labeled incorrectly on Fig 3.3. ——— yk

1200 Take ~30 min Lunch. ——— yk

1205-1235 CRA & Weston off site. ——— yk

1240 Walt of CRA on the phone. ——— yk

245 Resume work. ——— yk

1248 At P-32. PID = 0 ppm. ——— yk
DTW = 11.55 TOC ——— yk
TD = 18.05 TOC ——— yk

9/4/03

Note: All the wells so far have been all 2" Stainless steel Casing.

1252 At MW-7S&D ——— yfn
Ants. inside of MW-7D. Hard bottom at MW-7D. TD=57.22 TOC. ——— yfn

LATE ENTRY: Per CRA walt, peristaltic pump was mentioned as the primary sampling method. Will run this by Jim to see if this is acceptable. (Walt mentioned ~1100). ——— yfn

1301 At ~~High~~ P-31. - Flush mount well
DTW = 8.49 TOC ——— yfn
TD = 12.40 TOC Hard Bottom
Well in good condition. ——— yfn
Flush pad is loose. Moved [illegible] closing the well. ——— yfn

1310 On Peter Lin property / Traveling

1314 At MW-3S &3D. One of the [illegible] have a huge bee nest inside. [illegible] pretty well overgrown and (area around) therefore difficult to judge whether or not the pads are intact.

1334 At G10Z S, L, &D. Very hard to access behind thick spiny trees. yfn
~~G10Z S yfn~~ Putting a new cap (inner) on the G10ZL well. ——— yfn

1346 At P-26. Missing a cap. ~~Port yfn~~
According to Walt of CRA, the owner of the property told him that the well maybe bent due to the construction activity (they cut trees around).
DTW = 8.52 TOC
TD = 20.4 TOC Soft bottom.

9/10/03

ote: The ~~owner~~ owner told Walt that the well was bent and they yanked it back. ~~If yes~~ There is a possibility that they have a problem.
Put new cap ~~at yes~~ on P-26. — yes
1355 At P-28. P-28 is a flush mount.
1400 The owner (Mr. Tamelino) on site.
1414 At MW-06S. Strange Flush. MW-06S appears to have a lot of mud inside. — yes
MW-06D appears usable. — yes
~~25.96=DTW~~ — yes
~~TD yes~~ — yes
Obstruction at 1.2' at MW-06S flush mount well in the middle of a plowed field. The whole well seems loose. — yes
1425 Owner off site. — yes
1430 Owner did not go off site. — yes
1430 At P-29. Very tall stick up — buried in grape vine — yes
DTW=7.42 Toc No oil } P-29.
TD=14.7
1434 At P-30 — stick up. — yes
DTW = 9.24 Toc No oil.
TD 15.08 Toc
1445 CRA will take a water break — go purchase some. — yes
1509 Received a call from Om Patel regarding the proceedings. At P-16,
13.2 DTW Toc — yes
21.28 TD Toc soft bottom
Odor — from the well. — yes
something blank at the TIP - non-oily

9/10/12

1512 At MW-5 S&D.
MW-5 S&D ~~No PID~~ PID reading 0ppm
MW-5D
13.75 DTW TOC
49.08 TD TOC Soft bot
~~May need to~~
MW-5S has had ~1' of oil before

1520 At P-14. product present
DTO = 12.18' TOC
DTW = 12.63' TOC
Not taking any TD measurements check for DNPLs in deeper wells. Black product. Product odor.

1529 At ~~G-109 S&D~~ G106 S&D
1533 Taking DTW at G106D only for now
DTW = 13.28 TOC
TD = 47.4 TOC soft bottom
No odor.

1537 Trying to locate P-23. The flushmount cap appears to be buried.
1540 Located P-23 using magnetic probe.
1545 P-23 DTW = 10.10' No product.
TD = 17.95 TOC Very soft bottom, odor.

1548 At P-15. Trying to open the well. (Flush mount) ~~very intact~~ The concrete pad looks good but the cover (metal) appears cracked.
1555 No cover at P-15 (inner cap and outer cover is cracked). They will have to be replaced. CRA will not be sampling. Trace product at (Non-measurable) this well. Strong odor (Oily)

9/10/03

1559 Inner Casing at P-15 appears bent, having a problem putting a new cap. P-15 covered w/ new inner cap. Trying to put the cracked metal cover back on well. They will try to replace this next time.

1602 The son of the owner of the Tameling property stopped by to get some updates.

1607 Back at MW-6S ——— yh
DTO = 11.69 TOC ——— yh
DTW = 13.64 TOC ——— yh

1613 P-13 ——— yh
DTW = 11.92 TOC No product ——— yh
TD = 15.82 TOC ——— yh

1616 Back at MW-5S. Odor ——— yh
DTO = 11.98 } Trace ——— yh
DTW = 12.01 } ——— yh

Oildecon has been done using alcohol, Alconox & H_2O and Distilled water.

1623 At P-01. CRA checked to see if there were any wells missing on site side (North) of the road and realized that P-01 was not done
DTO = 10.09 TOC ——— yh
DTW = 11.12 TOC ——— yh
Very thick black product. Odor.
~~Walt is not wearing~~ Walt is wearing only one glove. ——— yh

1638 At P-24S or P-24. There is only one well & the owner had put Manhole Casings around the well. The other one appears to be gone. ——— yh

1640 Trying to open P-24 well. ——— yh
DTW = 5.77 No oil.
TD = 12.80 Soft bottom
This should be P-24S. ——— yh

9/1/01

1650 Mr. Taneling is trying to dig up P-24

1657 P-24 Open.
DTO = ~~4.4~~ 6.26 TOC
DTW = 8.98 TOC
The owner is going to try to put Manhole on ~~this~~ as well.
Cover broke as ~~they~~ CRA tried to close P-24.

1700 At P-25S
DTO = 5.48 TOC
DTW = 5.51 TOC
TD = 11.71 TOC
P-25
DTO = 6.0 TOC
DTW = 8.88 TOC
TD = 16.45 TOC
Does not appear to have any DNAPL.

1720 P-25 ~~was~~ inner cap was broken.

1723 Taking measurement ~~at~~ to P-25 for next time.

1724 At P-20
DTO = 8.85 TOC
DTW = 12.76 TOC

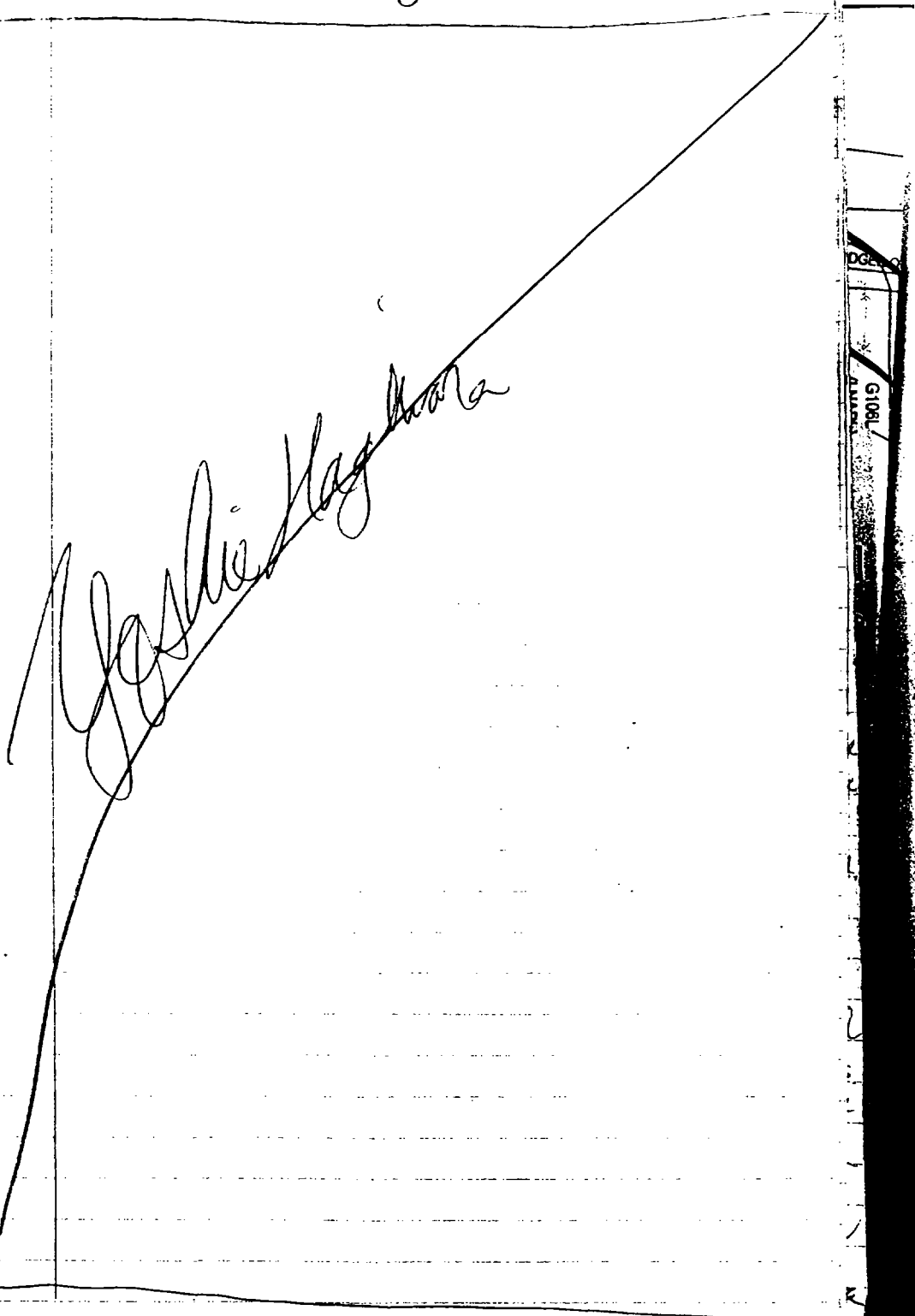
1738 At P-19. Opening the well.
DTO = 13.82 TOC
DTW = 16.32 TOC

1744 At P-21. Cutting the lock open
DTO = 10.86 TOC
DTW = 12.83 TOC

1748 Done taking measurements & well inventory.

9/10/03

1754 Done for the day. Offsite. — JL



GW Well Development 9/17/

0747 On site. CRA is not on site yet.
0755 CRA Walt Pochron on site. Getting set up at the drum staging area.
0811 CRA Walt is setting the drums. Sarah of CRA on site.
0816 Per Walt of CRA, they will start develop the uphill wells G101M & G101D. They are not going to be sampling any wells for products.
0830 Calibrating Oakton (pH, conductivity & temp probe) unit. Per Walt, CRA will be replacing the well locks. (These well locks had to be cut during well Inventory)
0843 Decontaminated Water level prior to using. Per Walt, the plan of action is to use bailer (stainless steel to surge), and use pump (whaler) as necessary.
0852 Done w/ prep work. Driving over to railroad area to access G101M & G101D

Personnel: Walt Pochron (CRA)
Sarah Benovic (CRA)
Yoshie Hagiwara (WESTON)

Weather: Sunny, clear sky ~70°F.

0912 At G101M & D. Cutting ~~the wire ties~~ they put in last time.
0918 ~~Start Purging~~ G101M DTW = 19.22' TOC
G101D DTW = 18.44' TOC
0922 Surging well G101M.
0932 Start purging G101M. Silty water, Lt. brown
0942 One well volume is approximately less than 1 gal. Approx 3.5 gals have been purged so far

List of wells to be ~~sampled~~ Developed on 9/17/03

MW-1S (S/sump at bottom) Developed: 9/17/03

MW-1D (:) 9/17/03 tubing

MW-3S 9/18/03 No Tubing

MW-3D 9/18/03 ~~tubing~~

MW-6S – cannot be developed by PA wait for driller

MW-6D 9/18/03

G101M (5' screen) 9/17/03

G101D (2' screen) 9/17/03 tubing

G102L

G106D

P26

P-28

P-29

P-30

P19 — Not ~~sampling~~ developing b/c oil

MW-2S 9/17/03 tubing

MW-2D 9/17/03 tubing

MW-4S 9/18/03 tubing

MW-4D 9/18/03 tubing

MW-5S — Not ~~sampling~~ developing b/c oil

MW-5D

MW-7S tubing 9/18/03 ~~No tubing~~

MW-7D No tubing. 9/18/03 ~~No tubing~~ No tubing

MW-8S

~~MW~~ G102S

GW well development 9/17

0947 pH & Conductivity have been stable. Purging almost 5 gals. Water is no recharging as fast anymore ——— Water is starting to clean up.

0950 Stop purging G101M. 5 gals purged so far.

0952 Per Walt of CRA, ~ 3.6 gals of H2O per well volume. Surging G101D. (Surge for 10 min before purging.)

0954 Bailer is jammed in the well

Note: Per Walt of CRA, the other "Monitoring wells are screened w/ Sump" at the bottom (below screen)

1008 CRA is going to use another bar to dislodge the bailer that is stuck in G101D. Sarah is decontaminating the stainless steel bailer and bringing it up. In the meantime, Walt decides to purge G101M some more. ~ 2 gals purged.

1015 Bailer dislodged. Resume surging

1023 Still surging at G101D. Resume purging at G101M.

1026 Purged ~ 7.5 gals at G101M. Water is less silty now. Cloudy water

1027 Started purging G101D. The water is more rusty than silty.

1031 Approximately 4 gals of water has been purged from G101D. Approx. 8 gals of water has been purged from G101M.

1033 Collecting 1st Water quality parameters at G101D. Rusty & Cloudy water

1041 Collecting water quality parameters at G101M at ~ 9 gals.

9/17/03

1042 Collecting water quality parameters at G101D @ ~6 gals purged. —JH

1045 Stop purging G101M after purging ~10 gals.

1100 Hauled back 4 buckets of purge water to the truck area. CRA will switch to a whale pump from bailer at G101D.

1112 Back at G101 area. Pulling out the bailer from G101D. —JH

1123 Start whaler pumping at G1D. They will have one person attend the well and

1128 Collecting ~~2nd~~ 3rd water quality parameters at G101D (~12 gals purged) —JH

1135 Collecting 4th water quality parameters at G101D (~16 gals purged) —JH

1138 Stop purging for a while since purged water have to be discarded in a drum. —JH

1151 Resume purging at G101D. Also checking the TD for G101M after development:
TD = 23.6' TOC (G101M) —JH

1154 Collecting water quality parameter readings at ~20 gals at G101D. —JH

1200 Taking the last set of water quality params at ~24 gals. Stable readings.

1208 TD = 41.01 TOC at G101D after development. —JH

1219 Back at the truck. —JH

1222 Per CRA Walt, they are going to take lunch after discarding purge water into drums.

1226 At the drum staging area. —JH

1230 Per CRA, lunch will be ~30 min. —JH

1315 Back on site. —JH

1316 At MW-1S & 1D. —JH

1323 Taking DTW = 10.11 — feet MW-1D. —JH

9/15

TD = 47.85 (MW-1D)

1327 DTW = 10.48' TOC (MW-1S)
TD = 20.75' TOC - silty

1330 Per Walt of CRA, they are going to use a weighted plastic bailer for MW-1 and surge & purge. They will surge MW1 a stainless steel bailer, and change over to pump (whale).
At G101 M&D, the surging & purging were done using stainless steel bar. No plastic bailer was used.

1340 1 well vol. for MW-1S ≈ 1.6 gals per CRA. 1 well vol. for MW-1D ≈

1341 Start purging at MW-1S. Dark grey (Murky). Started surging MW-1D.

1345 Taking 1st water quality param at MW ~2 gals purged.

1354 Taking 3rd H2O qual. param. at MW at ~ 6.5 gals purged.

1401 Taking water qual param at ~11.5 gals (MW-1S)

1404 " " at 14 gals.

1409 Taking water qual. param at 16 gals. Stabilized. Stop purging MW-1S. Water cleared up quite a ~~bit~~ bit

1411 Resume surging at MW-1D prior purging w/ a whale pump.

1418 Whale pump down at MW-1D.

1420 Start purging MW-1D.

1428 Taking 4st water qual. param. at MW-1B. Translucent (slightly cloudy) water.

1430 Taking TD at MW-1S. TD = ~~14.80~~ 20

9/17/03

1433 Taking Water Qual. param. at MW-1D. Slightly cloudy water. ——— yz

1438 ~18 gals purged so far at MW-1D.

1446 Take another WQP at MW-1D. The parameters are pretty stable. ——— yz

1453 ~30 gals purged at MW-1D ——— yz
Taking last reading at MW-1D. Stable.

1455 CRA pulling the tubing & pump up. They are leaving the tubing in at this well if possible. ——— yz

1457 TD = 48.08' at MW-1D after develop.

1500 Finished pulling the tubing down at MW-1D. Will ask Tom Patel about this. ——— yz

1515 At MW-2S & 2D ——— yz
TD = 45.84 at MW-2D. ~~Purging~~ yz

1524 Surging at MW-2D. ——— yz
1 well vol. = 5.5 gals. ——— yz

1531 Finished surging MW-2D. Smell of Fe & H_2S (slight). ——— yz

1535 Start purging MW-2D. Dark grey cloudy water (murky) ——— yz

1544 Taking WQP at 6 gals. ——— yz

1549 Asked why Walt was not wearing gloves handling purge water. He said that it is b/c he would not die from it. ——— yz

1554 ~76 gals purged so far. ——— yz

1557 Taking ~~TD at~~ DTW = 11.57 TOC
TD = 14.73 TOC at MW-2S. ——— yz
Soft bottom. CRA will bail this well.

1559 ~20 gals purged so far at MW-2D. ——— yz

1601 Decontaminating S.S. baller prior to use at MW-2S. ——— yz

1602 Took 24 gals so far at MW-2D. Stabil[illegible]

9/1

1603 Done at MW-2D.

1604 Tried to put the bailer down at MW-2S. (1 well vol is ~0.5 gals. The well is bent due to the tree that is growing next to the well. They will try developing using a peristaltic pump.

1620 Started purging MW-2S. Very thic muck came out from the well. Ext murkey water (brown silt & black particles).

1626 Whale pump out from MW-2 MW-2D TD = 45.9' TOC

1636 Still swaging & purging at MW-2S

1638 Readings at MW-2S has been stab so far. ~4 gals purged at MW Purge water is clearing up nicely.

1642 Done purging at MW-2S. ~5 gals pu at MW-2S.
TD = 15.92' TOC after dev. at MW-2S

1648 Packing up at MW-2S & D

1651 At drum staging area. Drumming th purge water.

1707 Done for the day. CRA will start at 08 tomorrow morning.

well development

9/18/03

0710 Hagiwara leave for site. —yn

0805 On site: CRA Walt Puchner & Sarah already on site. —yn

0815 Calibrating Oakton WQ meter. —yn

0820 Their pH meter: yn CRA is having a problem w/ their pH meter of Oakton Unit. CRA is trying to arrange for another unit. —yn

0830 Walt received a call back from the office. Somebody will be dropping off another WQ meter. —yn

0845 waiting for the WQ meter. Will take a quick bathroom break before starting.

0910 At MW-4S & 4D. —yn

MW-4S DTW = 10.81' TOC —yn

TD = 21.44 TOC —yn

MW-4D DTW = 12.53' TOC —yn

TD = 47.96' TOC —yn

0915 A CRA person is on site w/ WQ meter

0920 Calibrating the new WQ meter (Oakton)

0922 Dropping a stainless bailer at MW-4D.

0927 Done calibrating the WQ meter. —yn

0934 CRA changed decon water for the pump (whale) this morning. —yn

0937 Pump is down in MW-4D. —yn

Start purging MW-4D. Pretty murkey water

0952 MW-4D has 5.67 gals / well vol.

~10 gals purged so far. The water is clearing out. —yn

MW-4S = 1.7 gals / 1 well vol.

1006 ~20 gals. purged so far —yn

1014 Taking 24 gals reading. Stable readings.

1025 Taking 30 gals reading. Slightly cloudy H_2O.

9/18/03

1027 Surging MW-~~4S~~-4S.
Stopped purging MW-4D at 30 gals.
1037 TD = 48.22 at MW-4D after develop.
1044 Start purging MW-4S. Murkey Brown gray water.
1047 Taking WQP at ~2 gals purged.
1052 ~~Purging~~ Purged ~ 8 gals so far.
~~10~~11100 Taking reading at ~ 15 gals. Slightly brownish cloudy water. Readings are not all that stable (cond keeps increasing)
1104 Stop purging @ ~17 gals. Per CRA, Conductivity jumped some but stabilized at the end. water cleared up quiet a bit since the beginning.
1105 Packing up at MW-4 area.
1109 At MW-4S, TD=21.7 ≥ TOC after development.
1113 Done at MW-4S.
1115 At the drum staging area. Discard purge water.
1122 - 1140 Lunch break.
1140 Back at the site. CRA is not back on site yet.
1209 CRA back on site.
1212 At MW-3S & D.
setting up at MW-3D.
MW-3D DTW = 8.02' TOC
TD = 47.41' TOC
MW-3S DTW = 8.63' TOC
TD = 21.5' TOC
well vol. for MW-3D = 6.3 gals
≈ MW-3S ≈ 2.06 gals
1225 Surging both wells MW-3S & 3D.

9/18/08

1238 Per discussing w/ CRA on the wells to be developed still. Per Walt of CRA, there are total of ~~24 wells~~ 20 wells to be developed. Per CRA, they are not sampling P-19 & MW-55 b/c there was product in these wells. Also, they cannot develop MW-65. 22 wells have to be developed and so far, total of 8 wells have been developed. After MW-35 & 3D, they will have 12 wells left to do. yz

1242 Start purging MW-3D. yz

1247 Purged 5 gals at MW-3D. Slightly cloudy water. yz

~~LATE ENTRY~~ yz

LATE ENTRY: ~~1248~~ yz 1245 Started surging at MW-35 at 1245. yz

1253 Start purging MW-35. Muddy water

1257 Purged ~ 4 gals at MW-35. Taking WQP. yz

1300 ~ 15 gals purged so far at MW-3D Taking 3rd WQP readings. yz

1301 Stop purging MW-3D. ~15 gals purged parameters stabilized. Clear water.

1302 Taking 6 gal measurement at MW-35.

1312 Still bailing at MW-35. ~15 gals purged so far. Parameters are stabilizing.

1317 Done purging MW-35. Taking the last WQP reading at ~~MW-35~~ yz 20 gals purged. Slightly Cloudy (light brown) water. yz

1318 Pulling the pump out of MW-3D. yz

Yvette Yzaguirre

9/18/03

1320 MW-3S TD=21.5' TOC after develop
MW-3D TD=47.45' TOC
1325 Changing decon water.
1326 Having a problem putting the tubing back down at MW-3D.
1330 Packing up at MW-3.
1333 CRA is going back to drum staging area to discard purge water. They will start on MW-6D after that.
1350 At MW-6D. DTW=6.34' TOC
TD=45.96' TOC
1 well vol. = 6.3 gals
1405 Phoned Om Patel to give him an update on the proceedings at the site. Per Om Patel, plan on not moving on site unless he calls back tomorrow.
1438 Purged ~18 gals so far. Still purging at MW-6D.
1450 Purged ~23.5 gals, slightly cloudy water, will purge another 5 gals.
1455 Still purging MW-6D the water looks the same, slightly cloudy.
1500 Purged ~28.5 gals, stable. Still purging.
1510 Purged ~33.5 gals. Same cloudy water params are ~~still~~ stable. Stop purging.
MW-6D TD=46.2' TOC after development.
1516 ~~Done at MW-6D. Going back to area to~~ drum area to discard purge water.
1532 At MW-7S&D. Setting up WI canvas

9/18/08

for traffic safety. ——— yz

1536 MW-7S DTW = 18.47' TOC
TD = 34.85' TOC Soft
MW-7D DTW = 18.2' TOC
TD = 57.21' TOC hardbottom

MW-7D = 6.42 gal/well vol ——— yz
MW-7S = 2.62 gal/well vol ——— yz

1543 Start surging MW-7D. ——— yz
1545 Start surging MW-7S. ——— yz
1554 Start purging MW-7D. Milky grey water. ——— yz
1600 Surging MW-7S. Setting up to put a pump down at MW-7S.
1612 ~~Stop the pump.~~ yz The pump at MW-7D got clogged up and stopped. Pull out the pump to check. The pump works, but had a lot of mud ——— yz
1614 Put down the pump and resume purging at MW-7D. ——— yz
1614 ~ 6 gals has been purged at MW-7S already. ——— yz
1621 Taking readings at MW-7S at ~1 gals
1625 Pump stopped. Resumed purging w/ car charger instead of a battery. The battery was low. ——— yz
1627 ~16 gals purged at MW-7S. The WQPs have been pretty stable so far. ——— yz
1629 ~6.5 gals purged at MW-7D. Water is clearing up. ——— yz
1632 Taking another reading at MW-7S. Stable
1638 Taking last reading at MW-7S.
~23 gals (10 well vol.) purged.
The water is slightly cloudy. ——— yz

9/18/03

1645 Still purging MW-7D. Water is clearing up nicely. —yr

1651 Taking a WQP reading at 18.5 gals at MW-07D. —yr

1701 Taking another WQP reading at MW-7D stable. Water cleared up quite a bit. —yr

1704 MW-7S TD = 35.05' TOC after dev. MW-7D is still purging. —yr

1711 Stop purging MW-7D. Taking last reading. ~32 gals purged. Water is just about clear. —yr

1716 TD = 57.26' TOC at MW-7D after development. —yr

1718 Done at MW-7D. —yr

1723 Back at ~~MW-9~~ drum staging area. Containerizing purge water. —yr

1733 Done for the day. They are going to start at 07:30. —yr

1741 Done at the site. off site. —yr

Yvette Hoglund

Water level measurement 10/2/03

0710 Hagiwara leave for site. ——— yz.

0753 Hagiwara on site. CRA Sarah Benoit & Jeff ~~Kolodziejski~~ Kolodziejski are already on site. ———

0810 Start collecting DTW measurements at G101 area. ———

0827 At MW-8S in G104 area.

0831 CRA is replacing the inner caps for G104D.

0835 Also Replaced the locks at G104 D&L.

Weather: Clear, Sunny, ~32°F at ~0730, starting to warm up slightly at 0835.

0857 At MW-1D. It appears that the water level tape/probe. CRA will go and buy battery for the probe. ———

0859 CRA off site. ———

0909 CRA back on site. ———

The water level meter is working fine after changing the battery. ———

0934 Moving over to Pete Tameling property. Will hold off on the product wells on site.

0942 At P-26. Asked whether or not they could develop this well w/o any problem per Sarah, they used peristaltic pump to develop this well. They could not fit a bailer, but developed the wells ok. The water cleared up from Milky water in the end on 9/19/03. ———

0954 Total depths seems off at G102 wells.

0959 At P-28. ———

1036 Back at the truck refilling decon water

1049 P-24 opened. ———

1056 Putting new lid on P-24 to replace a cracked one. ———

Well	DTW (ft Toc)	TD (ft Toc)	Notes 10/2/03
S19M	19.54	23.61	
G101D	18.75	39.98	
G101L	18.81	31.40	
MW-8S	10.32	24.09	
G104D	9.55	10.59(?)	New expandable cap & lock
G104L	10.35	16.40	New lock
P-08	8.60	11.51	New lock
P-07	8.37	13.38	New lock, New exp. cap
P-06	10.77	12.34	New lock
P-05	10.41	13.62	New lock
MW-1S	10.79	20.89	
MW-1D	11.70	37.28	
MW-2S	11.85	15.78	
MW-2D	12.40	45.90	
MW-4S	11.33	21.48	New exp cap
MW-4D	12.82	27.43	
P-09	11.42	15.63	New lock
MW-3S	8.93	21.26	New cap
MW-3D	8.33	~~16.49~~ 47.19	
P-26	8.72	20.42	
G102S	11.71	17.22?	soft bottom
G102L	11.53	16.69?	
G102D	12.49	21.53?	
P-28	5.98	12.64	
MW-6S		—	No water level due to obstruction
MW-6D	6.61	15.30	
P-29	7.59	15.25	
P-30	9.31	15.31	
P-32	11.75	18.10	New lock Rusty Hinge
MW-7D	18.40	~~36.63~~ 57.23	Soft bottom
MW-7S	18.74	35.09	
P-31	8.91	12.41	Lock needs to be removed ↑ New lock

Well	DTW	TD	Notes	10/2/03
P-20	12.63	—	DTO = 9.12	New lock & cap
P-24	9.12	—	DTO = 6.45	chipped cover
P-24S	5.82	12.79	No oil	New cap & new lock
P-25S	5.82	—	DTO = 5.64	Needs a new cap & lock
P-25	8.86	—	DTO = 7.24	Needs new plug ~~& new lock~~
P-21	12.33	—	DTO = 11.18	Needs a new cap
~~P-20~~				yes
P-19	16.35	—	DTO = 14.05	New lock
P-23	10.39	17.50	No oil	New plug & lock needed
P-15	11.04	—	DTO = 11.01	Need new Plug?
G106L	13.83	—	DTO = 11.98	Has new lock
G106D	13.47	47.13	No oil	Has new lock
P-14	12.95	—	DTO = 12.38	New lock
P-13	12.18	15.81	No oil	New lock
MW-5S	12.47	—	DTO = 12.27	Has new lock
MW-5D	14.00	~~28.77~~ 49.38	No oil	Already has new lock
P-16	13.44	21.29	No oil	Soft bottom
P-01	12.46	—	DTO = 10.42	New lock

10/2/03

1117 At P-21. ——— JR
1127 Walt Pochron on site to check what is going on. ——— JR
1132 Walt off site. ——— JR
1140 Replacing the lid w/ a new one at P-15. ——— JR
Note: Decontamination of oily material was done by using isopropyl alcohol.
1200 Done collecting DTW measurement at P-01. Will go back to G106 & P-13 & 14 area. ——— JR
1215 Done taking DTW at G106, the last well. Decontaminating the probe. ——— JR
1222 Done at the site. Off site.
1227-1307 Lunch ——— JR
1400 Back at VHI. ——— JR

Joshua Kaufman

Oversight - Soil Investigation

Y. Hagiwara 10/21/03

0723 Y Hagiwara of WESTON on site.
CRA not on site yet but the drillers
are already on site. ——— yh
Weather; Partly Cloudy, ~58°F at 0650
High expect 66-68°F. ——— yh
0741 Sarah Benovic of CRA on site. ——— yh
Waiting for Walt Pachron to come onsite
Personnel on site?
Sarah Benovic (CRA)
Mike Magnan (Board Long year)
Ben Price (=)
Wess Inhoff (=)
Yoshie Hagiwara (WESTON)
0751 Walt Pachron of CRA on site. ——— yh
Per Walt, they will be flushing the MW-
65 to clear out all the sediment from
the well. They will also try to put a
new well casing, per Walt. ——— yh
0810 On to Tameling property. ——— yh
0813 At MW-6S. Setting up. ——— yh
0830 The screen appears to be bent. ——— yh
0841 Walt Pachron is taking a photo of the
well. Per Walt, they will cap the well
and leave it for now. CRA will contact
the health Dept. & EPA before abandoning
the well (~48 hr notice required by the
health dept. before abandoning a well.
0845 Phoned Om Patel of WESTON to give him
an update on MW-6S. They will
have to install a new well. ——— yh
0855 Back at the site property. ——— yh
1000 Board crew off site to pick up necessary
piece of equipment from another Board crew
close by. ——— yh

Start 10/21/03
End 10/22/03

Photo log

Photo #	Date	Time	Description
1	10/21/03	0823.	Cracking open the ~~well~~ flush mount & well casing
2	10/21/03	0834.	Bent well MW-65. The screen runs off to the side of where the top of the pipe/casing was. ——— yn
3	10/21/03	0841.	Another photo of MW-65.
4	10/21/03	1017.	Drilling set up at SB-1-03.
5	10/21/03	1052.	Drilling at SB-1-03, CRA is air monitoring. ——— yn
6	10/21/03	1213.	Core from SB-2-03. Lighter section (yellowish-creamy color) shows rock fragments of bedrock. ——— yn
7	10/21/03	1351.	Dropping split spoon sampler at SB-3-03. ——— yn
8	10/21/03	1359.	Impacted weathered bedrock SB-3-03
9	10/21/03	1433.	Decontaminating augers. ——— yn
10	10/21/03	1556.	Drilling ~~at SB-5-03~~ SB-5-03
11	10/21/03	1702.	Collecting rinsate blank.
12	10/22/03	0803.	Drilling setup at SB-6-03
13	10/22/03	194.	Drilling at SB-7-03. Radio tower can be seen on the left (west). ——— yn
14	10/22/03	1033.	CRA Sarah B. is monitoring drillers breathing zone. ——— yn (SB-7-03). ——— yn
15	10/22/03	1055.	SB-8-03 Location. This point was moved to ~~dfn~~ reduce the # of borings.
16	10/22/03	1203.	Drilling (spoon) at SB-9-03. ——— yn
17	10/22/03	1336.	12-12.5' section at SB-9-03.
18	10/22/03	1344.	12.5-13.0~~0~~' Section at SB-9-03. Saturated. Odor. ——— yn
19	10/22/03	1546.	Photo of 8-10 & 10-12' section core. Toward and to the right is bottom

10/21/03

0910 CRA is calibrating PID - HNu PI 101 gn
Using 100 ppm isobutylene gn
CRA will have this unit dedicated to breathing zone air monitoring. gn

0914 CRA is calibrating ~~another PID~~ gn DeltaRAM
Calibrated at 0 ppm (w/ fresh air). DeltaRAM is a personal air monitoring unit. gn

0920 Walt Pechan is training Sarah on the use of Dragger tube in case it is necessary.

0927 Calibrating a MiniRae Plus (PID) using 100 ppm isobutylene & fresh air. gn

0942 Drillers back on site. gn

0956 Decontaminating spoons & rods before starting on a boring. gn

1013 Getting set up at SB-1-03. gn

022 Per Walt's request, switching the hammer on the rig to a smaller one to use at this site. gn

024 Start dropping spoon at SB-1-03 gn

026 Start drilling w/ HSA at SB-1-03. gn

26 ~~0 gn~~ 0-2' core extracted from SB-1-03 gn
Recovery ~1.5'. gn

~~0 gn~~ 0-1: Dark brown, organic rich gravelly silty clay. gn

1-1.5 Black, asphalt-looking material w/ some gravel. No odor. Distinctive Lt brown, clayey material between the bottom & top layer ~1' bgs.

34 2-4' recovered. ~1' recovery. gn

2-2.2': same black stuff as above (Black ash??)

2.2-2.4: clayey gravel. Limestone gravels, Lt grey w/ Lt brown clay. gn

2.4-3 Dark grey, moist, silty clay, stiff.

CRA is sampling 2-4' section for lab analysis gn

SB-1-03 10/21/03

4-6: ~0.5' recovered. ——— yn
Gravelly silty clay / clayey silt, Lt brown, ~~appears~~ looks like weathered bed rock (LS) heavily weathered to ~5.5', more ~~color~~ competent rock from 5.5' down although slightly weathered. ——— yn
6-8: Recovered ~0.8'. ——— yn
Moist to wet Lt brown to Lt grey Gravelly clayey stuff. Black staining and odor at the bottom ~2-3". Stains are seen between gravels ~~yn~~. ——— yn
Depending on what comes out in the next interval, they will sample this section (bottom)
8-10: 50 blows for 5", no recovery.
CRA will sample the 6-8 section for lab analysis (pretty close to water table)
1104 Drilling down to 10-12. ——— yn
1110 Hit definite water between 8 & 12'.
Headspace 25 ppm for 6-8' section
Black stained, weathered LS gravels & clay.
Strong odor. ——— yn
1115 Abandoning SB-1-03. ——— yn
Abandonment was done using holeplug & some of the top soil. (Backfilling the topsoil here)
1122 Packing up at SB-1-03. Will move to SB-2-03 next. ——— yn
1125 Moving to SB-2-03. ——— yn
Weather: Temp has cooled down from this morning.
Cloudy, breezy ~55°F. ——— yn
1132 Start drilling (w/ spoon) at SB-2-03
~~Dark black/brown, stiff yn~~ ——— yn
1139 0-2' ~~section~~ recovered ~1' recovered.
0-1' Dark brown/black, STIFF gravelly clay
Organic, grass on top. ——— yn

SB-2-03 10/21/03

0-2 gravelly ~~sandy silt~~ yn silty sand, moist to slightly moist. loose — yn

1147 2-4 recovered. — yn

~ 0.5' recovered. — yn

2-3.5 Dark to med brown, loose, ~~fine sand~~ slightly moist, gravelly silty sand. — yn

3.5-4 Med ~~brown~~ grey CS/Dolomite, stained black, odor, moist. — yn

1154 4-6 recovered. — yn

~ 0.5' recovered. — yn

All weathered bedrock, yellowish brown, Lt greyish gravelly clay, slightly moist odor

4&S Comment: — yn

The driller has not been wearing hearing protection. The helpers have been wearing them.

Note: 4-6' section of SB-2-03 has a strong odor w/ black staining it looks grey b/c of smudged stain w/ whitish background. — yn

CRA sampling Intervals:

2-4' / & — yn

4-6' — yn

201 6-8' section recovered. ~0.7 recovered. — yn

6-8 Thick, black stained (thick oily stuff) bricks ~~of clay~~ that looks like slough from above (4-6 section?) V. strong odor. — yn

Lt brownish greyish weathered rock (crushed, and angular) below. — yn

Slight odor — yn

8-10 2-3" of the section recovered. Still in ~~weathered~~ weathered bedrock, moist, yellowish brown, no stain or odor. rock fragments - relatively Larger crushed due to the drilling). Some clay & sand. — yn

— yn

1210 Stop at 10'. The auger was grinding at ~10' bgs. Refusal.

1217 abandoning SB-2-03. All the soil cuttings except for the top ~0.5' are containerized in a drum.

1225 Per Sarah of CRA, they will take 30 min lunch before starting on the next location. Walt Pochron will go off site for the lunch.

1230-1255 Lunch break.

1255 Drillers are not back from lunch yet. Walt Pochron is still on site.

1306 Walt Pochron off site.

Late Entry: Per Sarah & Walt of CRA Mini Rae Plus is not working properly. They will use one unit (HNu) for now, but they will order another PID for tomorrow.

1310 Drillers back on site.

1319 Setting up exclusion zone at SB-3-03.

Weather: Partly cloudy, Sunny, ~60°F, Light

1327 Start drilling at SB-3-03.

1332 0-2' core out from SB-3-03. Dark brown, gravelly silt, vegetation at surface. Slightly moist.

1337 CRA is checking drillers' breathing zone.
2-4' section recovered ~0.7' recovered. Moist to wet, plastic silty clay (w/ trace gravel) bottom ~3-4" is stained black. Extremely impacted look, black, strong odor. tr. gravel at the bottom as well.

1345 4-6' section recored ~1' recovery
Med grey mottled dk grey, stained w/ petroleum

SB-03-03 10/21/03

odor. Chunk of bed rock (Lt grey dolomite) at the top, and impacted, weathered, bedrock (clayey) at ~ 5.5'. Where impact does not appear obvious, the color is cream or yellowish and Lt greyish. ——— yn

Note: The driller of Boart Longyear started wearing hearing protection. ——— yn
at the beginning of this boring (SB-3-03).

1353 Trying to go to 6-8'. Having a hard time getting down. ——— yn

1355 Core for 6-8 of SB-3-03 is out ~ 1.2' of 6-8' section recovered. ——— yn
6-8. cream/yellowish) rock fragments w/ some clay (weathered bed rock), black stains in some places/patches) throughout the length Strong odor, slightly moist, no water yet.

1502 8-10' section recovered. ~1' recovery.
Head space reading for 6-8 = 350ppm in a bag.
8-10': moist to wet weathered bed rock, impacted black stains w/ odor, higher clay content & moisture content than 6-8'. ——— yn

1508 CRA will sample 4-6' section and 2-4' section. Unable to get enough sample from 6-8' section due to poor recovery & high gravel content.

Late Entry: At ~9' it appears that water may be present. CRA will try to go down to ~12' to confirm water. ——— yn

~9 Refusal at 10'. The spoon is wet on the outside. Appears to be water 9-10'. ——— yn

hrs: Cloudy again temp ~ 58°F. ——— yn

1 Pulling out the rods from SB-3-03. They will have to decon auger etc. now since they have no more clean pieces left. ——— yn

———— yn

SB-4-03 10/21/03

1425 Phoned Om Patel to ask about the intent of ~~this~~ investigation. According to the workplan, the intent is to determine the extent of LNAPL, however it does not specify whether the "extent" includes vertical extent. Since they have had to stop at refusal (bedrock) for the most part, are we to assume that the bedrock ~~top~~ is the extent of LNAPL contamination (defining the boundary at the bottom). —— yn

1447 Done decon. Moving to SB-4-03. —— yn

1450 Setting up at SB-4-03. —— yn

1458 0-2 section of SB-4-03 is out. Full recovery. —— yn

0-2: Dark, organic brown, moist, slightly stiff clayey silt. Some plant material at top ~ 2-3". —— yn

CRA is sampling 0-2' section for lab analysis Duplicate sample was also collected from SB-4-03 0-2' section. —— yn

1507 Still trying to go down to ~~2-4'~~ 4-6' section of SB-4-03. —— yn

CRA ~~took~~ air monitoring readings. At ~~yn~~ Background in drillers' breathing zone. —— yn

1510 ~~4'-6'~~ 4-6' section recovered. —— yn ~1.2'. Organic dark clayey silt as above to ~ 5.7' bgs. At ~5.7', encounter weathered bedrock (fragments of rock & some clay & silt), cream yellowish color. Some black/dark grey staining ~~in the~~ between rock fragments. yn 500 ppm = headspace. —— yn Strong odor. —— yn

LATE ENTRY: No recovery on 2-4' section. —— yn

SB-4-03 / SB-5-03 10/21/03

6-8'; ~ 0.5' recovered. Moist to wet. Same as above, increased finer grains (clay & silt) & less coarse grains. Stained black, & odor.

1521 Going down to 10'. Getting harder to penetrate down. ——— yn

1524 8-10' recovered. Odor like skunk.
6-8; 800ppm = headspace
8-10; 900ppm = headspace → Labsample
8-10; Lt to med grey clayey silt, strong skunk-like odor, turns sandy at ~ 9' bgs and start to get wet. ——— yn

1530 Continuing to 12' bgs. ——— yn

1536 10-12; ~1' recovery. Lt whitish grey moist to wet, Fragments of bed-rock, still strong odor, black at the bottom, still in the weathered section of bed rock. some clay/silt. ——— yn
Stop here at 12' bgs. Per driller, the depth is past water table. ——— yn

1541 Pulling out at SB-4-03. ——— yn

1545 Abandoning the boring SB-4-03. ——— yn

Weather; Sunny, clearing up, warmer ~ 65°F, breezy.

1552 Getting set up at SB-5-03. ——— yn

1556 Start drilling at SB-5-03. ——— yn

0-2; Dark organic brown clayey silt w/ gravels, ~1' recovered. No odor, slightly stiff, moist. ——— yn

2-4 ~~~1.5'~~ recovery. SAA to ~2.5' bgs. Plastic, moist, silty clay/clayey silt ~~mottled~~, Lt grey mottled yellowish brown ~~to mottled~~ yn A coarse seam of fragmented dolomite at ~3.7-3.8' bgs. ——— yn
No odor, appears clean. ——— yn

4-6 ~0.5' recovered. SAA, slightly drier than above yn

SB-5-03 10/1/03

1615 CRA is sampling 2-4' section for labs analysis. ——— yr

Headspace 0-2 = 40ppm ——— yr

2-4 = 30ppm ——— yr

1622 Spoon refusal at ~6'. ——— yr

Per driller, the tip of the spoon was moist to V. moist. ——— yr

Per CRA, they will stop ~~at SB-yr~~ here at SB-5-03. ——— yr

1627 Collecting sample from 4-6 section of SB-5-03. ——— yr

1630 Packing up at SB-5-03. ——— yr

1640 CRA packing samples. Drillers are getting ready to move over to decon area.

Per Sarah of CRA, they will collect equipment blanks after decon. ——— yr

Headspace reading for 4-6 (SB-5-03) was 42 ppm. ——— yr

1657 At decon pad. Board is decon'g the auger. ——— yr

1713 Finished sampling rinsate blank.

1717 Finish packing up samples. ——— yr

1722 Done at the site. Will meet at the same time tomorrow morning. Off site. ——— yr

Yasmin Kaghoro

Oversight - Soil Investigation

SB 6 03 Y. Hagiwara 10/22/03

0721 WESTON (Y. Hagiwara) on site. ——— yh
Drillers already on site. CRA is not on site yet. ——— yh
Weather: Clear sky, no cloud. ~45°F at 0730 expected high ~ ~~55°F~~ 50-55°F. ——— yh
0745 Sarah Benoit of CRA on site. ——— yh
800 Drillers are setting up at SB-6-03 location.
Personnel on site: Sarah Benoit (CRA)
3 drilling crew (Boart Longyear)
Yoshie Hagiwara (WESTON)
0804 Calibrating PID (HNu) using fresh air (0ppm) & 100 ppm isobutylene cal gas.
0809 CRA is also setting zero (w/ fresh air) on Data Ram. ——— yh
0810 Start drilling at SB-6-03. ——— yh
0813 Core (0-2') out from SB-6-03. ——— yh
0-2' Recovery ≈ 1.2' ——— yh
Dark organic brown gravelly S/H, moist, slightly stiff, organic smell, some plant material at top ~2". Same to ~1.5' bgs. ~~lighter~~ ——— yh
Crushed, weathered bed rock pieces from 1.5-1.7'. 1.7-2' bgs - silty clay, moist, plastic & slightly stiff, (+ greyish brown w/ some black sections. No obvious impact. ——— yh
1320 No recovery for 2-4' section, 50+ blow counts for 0". Very hard material. ——— yh
1324 Per Sarah of CRA; Walt said that he would like to reduce the number of borings ~~along~~ along the fence outside the fence. Initially, Walt has marked 8 boring locations, however, because of limited findings on Stratigraphy (shallow bedrock), he is looking to reduce the # of borings to 7 instead of 8. ——— yh

SB-6-03 10/22/03

The new (7) borings will be spaced out approximately 50' apart instead of 40'.

0827 It appears that they are drilling down to something very hard. (HSA). ——— JH

0835 4-6' section recovered. ~1.5' recovered. Lt. yellowish creamy brown, gravelly clayey silt, dry to slightly moist, stiff, slightly plastic, ~~gravelly~~ gravel sizes ~1-2" in diameter. No odor. ——— JH

Late Entry: CRA checked breathing zone (driller reading around 0824. ——— JH

0845 The hammer (140lbs) fell apart, Sarah phoned Walt to check if the drillers can used a 300lb hammer. Per Walt, drillers are going to go to a close by site to get 140lb hammer from another rig. ——— JH

0845 Very little recovery from 6-8'. Concrete pieces came up along w/ some sandy material, slightly moist to dry. No water no odor. ——— JH

Headspace reading: 0-2' = 180 ppm (w/ humidity)
4-6 = 150 ppm

0850 CRA will sample 0-2'. CRA will wait for 8-10' section before sampling. Will hold on to 4-6' section until the 8-10' section is recovered. ——— JH

0902 Still waiting for the drillers to come back on site. ——— JH

0919 Drillers back on site. ——— JH

0930 Resume drilling at SB-6-03. ——— JH

0938 ~~Fred~~ The 8-10' section out. ~2-3" of recovery. Wet, crushed bed rock, slightly weathered, light grey. Water ——— JH

SB-6-03 / SB 7-03 10/22/03

0940 4-6' section will be sampled for laboratory analysis. ——— yn

The 4-6' core has been sitting in ~~yn~~ on the spoon (open) for ~1 hr before being sampled. It is expected that some of the VOCs (gasoline range TPHs) may have escaped if there is any left. ——— yn

Per driller & CRA, they are calling it refusal at 10'. Finishing up at SB-6-03. ——— yn

1005 Gas pipeline company (Amoco) stopped by to see if any borings at the site is close to their line. It appears that he saw the rig at SB-6-03, and decided to check. ——— yn

1009 Start drilling at SB-7-03. ——— yn

1012 0-2 Core recovered - per recovery. ~~entry~~ After gravels on top in the spoon ~0' recovery. — yn

1020 2-4 section core recovered ~ 0.7'/2.5 recovery. Med brown, silty, gravelly sand to ~2.5' yn

2.5-4' Gravelly clayey silt, mixed bedrock, yellowish/cream color w/ Lt gray mottle dry to slightly moist. Broken up fragments up to ~ 1-2". ——— yn

Headspace reading of 2-4' section = 84ppm

1025 Still drilling down to 6' bgs. ——— yn

1028 Core from 4-6' section out. ~1' recovered.

4-5.3' Med to dark brown mottled w/ Lt brown, dry to slightly moist gravelly silt w/ trace clay Stiff. Crumbles under pressure. No odor.

5.3-6' Chunked up bedrock (rock fragments) w/ some fines (clay & silt) that are holding the fragments together. Lt grey/white w/ some reddish brown (Lt). No sign of Impact.

1032 Headspace = 88ppm for 4-6' section yn

SB 7-03 / MW 6-03 10/22/03

1036 Refusal at 6.5' bgs. Still dry ~2' above water table. ——yn
CRA is collecting 4-6' section for lab analysis. ——yn
1037 Pulling out of SB-7-03. ——yn
1056 Start drilling at SB-8-03. ——yn
1059 0-2' core out from SB-8-03. ~2' recovered Dry to slightly moist, gravelly silt. No odor. Gravel up to 50%, Loose, weak cementation.
1104 Headspace reading 0-2' of SB-03 = 14.5 ppm. ——yn
Late Entry: CRA checked breathing zone (miller) again b/c there was an odor here. It does not appear to be the boring. ——yn
1108: 2-4' section recovered. ~1.3' recovered. Moist gravelly SILT, Lt yellowish brown w/ Lt grey gravels (up to ~1" diameter angular rock fragments. Slightly porous, odor. No stain. Headspace reading = 0 ppm.
1112 Driller thinks he is hitting refusal. Per Sarah of CRA, they are going to try sampling some more. He was at 4.5 bgs when stopped. CRA sampled 2-4' section for lab analysis. ——yn
Note: The odor at 2-4' (SB-8-03) appears stronger between the gravels & the fines around them (in the gap).
1119 Still trying to drill down. ——yn
1124 Refusal at 5' bgs. Pulling out from the boring (SB-8-03). ——yn
1130 Per CRA-Sarah, they are going to take ~30min lunch. ——yn
1128 (LATE ENTRY) Phoned om Patel and left a

SB-9-03 / 1422/03

message regarding shallow refusal (before water) at this site.

1130-1200 Lunch break. ——— yn

1200 WESTON back on site. CRA Sarah is already back from lunch. Drillers are not back on site yet. ——— yn

Weather: Sunny, mostly clear, warming up ~55°F, breezy. ——— yn

1209 Drillers back on site. ——— yn

1214 Start decontaminating augers. ——— yn

1225 Done decon. ——— yn

1227 Moving to SB-9-03 location. ——— yn

1231 Setting up at SB-9-03. ——— yn

1242 Start at SB-9-03. ——— yn

1245 Board ~~will not collect~~ yn was unable to collect split spoon sample from SB-9-03 at 0-2'. The spoon kept bouncing on the surface. They will start collecting samples (spoon) from 2' down. ——— yn

1250 2-4' core from SB-9-03 is out. ~1' recovery. Med brown to Lt brown gravelly silt/fine sand, trace clay/silt, slight odor. Mottle of Lt grey & yellowish brown. Weathered bedrock. Gravels are fragments of bedrock & Lt grey/white. ——— yn Gravel up to ~30%. ——— yn

Note: SB-9-03 is located to the west of the gate. Headspace reading = 55 ppm for 2-4'. ——— yn

1258 4-6' core out ~1.2' recovered. ~~SAA~~ yn Silt (clayey), mottled med brown, Lt brown & Lt grey, gravelly, slightly moist, slight odor, no stain, sharp-edged gravels (angular). Gravels up to ~50%. ——— yn Slightly stiff, crumbles with pressure. ——— yn

CRA will sample 2-4' section for lab analysis.

Recovery of 2-4' section is ~1'. No odor. No sign of impact.

Late Entry: OVM SOB (PID) was calibrated at fresh air (zero) & 100 ppm isobutylene at 1421.

1518 CRA monitored breathing zone. Background (drillers' breathing)

1518 4-6' core recovered. ~0.7' recovered. Slight odor. No obvious sheen. Similar as above, gravelly clay, moist, some mottling. Obvious weathered bedrock or similar.

1522 CRA is collecting a sample from 2-4'.

1527 Headspace readings C-2 = 50ppm
2-4 = ~~51 ppm~~ 52ppm
4-6 = 40ppm

Walt of CRA is talking to a rep. from Heritage (?) Environmental Services of Cincinnati.

1528 6-8' core recovered. ~1' recovery. Slight odor, V. moist, gravelly clayey sand. Gravel ~ 45% very slight odor. Lt brown & Lt grey mottling.

1535 Core from 8-10' section recovered. Lt brown clayey gravelly silt (Higher percent than ~~both~~ previous core sections & less clay). Moist, plastic, no odor, no staining. More uniform color (minimal mottling). Slightly stiff.

Headspace 6-8 = 25ppm (SB 1.3)
8-10 = 18.3 ppm

1543 10-12' section recovered. ~0.8' recovery. No odor, Lt to med grey silty clay, plastic, moist, slightly stiff, tr. gravel.

SB-10-05 10/22/03

Headspace 10-12 = 50ppm ——— JH

SB-10-05 ——— JH

1556 12-14' section recovered. SAA, slightly more moist, odor, no staining. ——— JH

1602 Auger refusal at 14'. ——— JH

12-14 = 108 ppm - headspace reading.

1605 CRA is collecting 12-14' section sample. No water was encountered at 14'. ——— JH

1606 Pulling out of SB-10-05. ——— JH

1630 Walt P. staked out VER-1 & VP 1 thru 4 as well as PZ locations (proposed, waiting for approval). ——— JH

Done drilling for today. ——— JH

Drillers are decontaminating. ——— JH

1635 CRA is going through coolers, QAs etc for organization. It appears that Walt Pochron will be staking out VER-2 & VP-5 through 8. ——— JH

1653 Done at the site. CRA and drillers are discussing the plan for piezometers & wells. No actual work is going on. Hagiwara will go off site. ——— JH

Joelle Hagiwara

Oversight - Soil Investigation

SB-11-03 Y. Hagiwara 10/23/03

0730 WESTON on site. ——— yh

Weather: Partly cloudy ~ 45°F at 0630

Personnel: Sarah Benovic (CRA)
3 drillers (Boart Longyear)
Yashie Hagiwara (WESTON)

0742 CRA is not on site yet. Two of the drillers are at the other site for drums. Per Ben of BC, Wess is suppose to be leaving ~~tomorrow~~ tonight. ——— yh

0746 Drillers back on site. ——— yh

0753 Sarah of CRA on site. ——— yh

0806 Drillers are getting ready to move to SB-11-03 ——— yh

0820 At SB-11-03. Getting set up. ——— yh

0823 Calibrating HNu & Data Ram. HNu calibrated w/ fresh air (zero) & 100 ppm Isobutylene. Data Ram was zeroed w/ fresh air. No cal gas used.

0824 Start drilling at SB-11-03. ——— yh

0826 0-2' Core recovered. Poor recovery. Only ~2" of top gravelly sand (dry) came up. Tough to get through w/ spoon in the surface. ——— yh

0834 Strange but ~~distinct~~ distinctive odor from 2-4' section of SB-11-03. Slightly moist to moist Lt grey, ~~crumbled~~ crumbled ty clay (w/ gravels). Recovered only ~2". ——— yh
Odor is not a typical petroleum. But possibly some other chemical? Fishy smell) ——— yh
No obvious staining. ——— yh

0845 Taking headspace readings ——— yh
0-2: 56 ppm
2-4: 80 ppm

0852 Refusal at ~3' bgs. Stop drilling. Pack up at SB-11-03. ——— yh

SB 11-03 (RE) 9/23/03

No Sample was collected from SB-11-03.
Per CRA, Soil borings are all done in the Site property area. They will move to Taneling property across the street. ——yz

0900 Phone Om Patel and left a message with update on the site activities. ——yz

0910 While in the process of moving over to the Taneling property, Sarah received a call from Walt Pachon. Per U.S.EPA's request, they will redrill the locations that had shallow refusal by moving away 2-3' ft from the original borings. ——yz

0912 Back at SB-11-03 location. ~~Trying to get~~ Getting set up at SB-11-03 location.

0918 Resume drilling at SB-11-03 (RE). ——yz

0922 ~~The auger~~ Blind drilled to ~ 4' bgs. Will start collecting spoon samples from 4' down. CRA is calling the revisited borings "A" (e.g. SB 11-03A)

0930 4-6' core recovered; ~ 2" recovered. ——yz
Slightly moist clayey silt, slightly stiff, Lt grey mottled yellowish brown, gravel ~2-3" diameter at the top. Strong odor. No staining. ——yz

0941 CRA ~~checking~~ monitoring air. ——yz
(breathing zone). ——yz
Headspace. ——yz

4-6 = 40 ppm
6-8 = 58 ppm

6-8: Par recovery, same as above (4-6' section).

LATE ENTRY: Received a call from Om Patel. ~~Scott~~ yz
Scott Hansen (RPM) may come on site today.

0945 8-10: ~~Lt grey~~ Lt brown clayey silt, moist, Plastic, slightly stiff, No odor, no staining ~~Gr~~ yz Tr. gravel. Recovery ~ 0.7' Color turns into Lt ~~grey~~ at the bottom. ——yz

Oversight - Soil Investigation

SB-7-03A / SB-11-03A 10/23/03

0952 10-12: 1-2" ~~sand~~ gravelly sand. Chunks of clean dolomite (unweathered). ——— yn
CRA is going to sample 8-10' section.
10-12: 1-2" recovery. ——— yn

1003 Auger refusal at 11' bgs at SB-11-03A
Note: They will go back and redrill at SB-7 & SB-8 locations. ——— yn

1015 Moving to SB-7-03A. ——— yn

~~1030~~ 1025 Start drilling at SB-7-03A. ——— yn

1030 Calibrated OVM 580B. ——— yn
No recovery at SB-7-03A 0-2' section
blow counts of for 1' ——— yn

1042 2-4' section Gravelly sand. Recovery ~3-4"
Lt brown, very faint odor, no staining Rock fragments (up to 2" diam) up to ~50% loose sand/gravel. ——— yn

1048 4-6': Gravelly clayey silt, slightly moist no odor, no staining, chunks of rock frag next sizes ~ 1-2" diam, brown (Lt). weathered bedrock ~0.6' recovery. ——— yn

1052 Headspace reading (using OVM), SB-7-03A.
2-4' = ϕ ppm
4-6 = ϕ ppm

1056 6-8': 45 & 50/5" for blow count.
~ 0.8' recovery. Gravelly silt, moist to slightly moist. A large cobble (~3" diam) of Dolomite at the top trace clay, slightly stiff but weak gravel up to 40%
Med brown, no odor, no staining. ——— yn

1101 8-10': ~ ½" recovery. Slight petroleum odor no staining, moist, Lt brown silt w/ some clay. Trace gravel. slightly plastic. ——— yn

Photo log #2

Start 10/23/03
END 10/24/03

20 10/23/03 ~~sfgh~~ 1023 Borings SB-11-03B-SB-11-03A, from South. SB-11-03 is to ~~the~~ left & west. ——— yn

21 10/23/03 1050. 4-6' section of ~~SB-11-3A~~ SB-7-03A. ——— yn

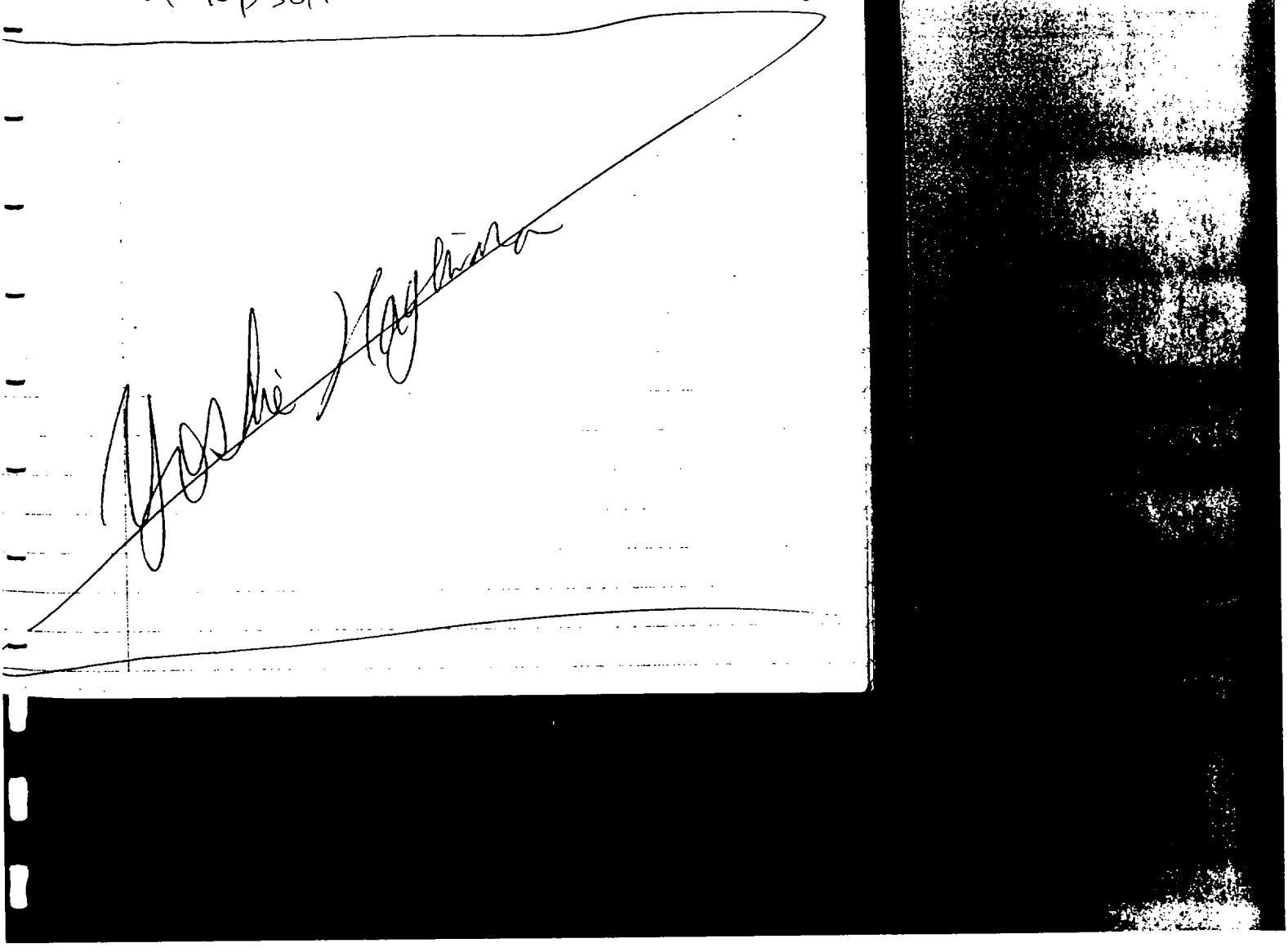
22 10/23/03 1230. SB-7-03B & SB-7-03A, SB-7-03 is to the left & west. ——— yn

23 10/23/03 1242. Storage of soil cuttings, in drums. ——— yn

24 10/23/03 ~~T240~~ 1254. 4-6' section of SB-8-03A. ——— yn

25 10/20/03 1320. Packing sample (8-10') of SB-8-03A in ice cooler. ——— yn

26 10/23/03 1421. 0-2' section of PZ-1-03. Start to get into weathered bedrock after ~2" of top soil. ——— yn



SB-7-03A / SB-8-03A 10/23/08

Headspace readings SB-7-03A

6-8 = 0 ppm

8-10 = 0 ppm

1107 10-12; No recovery, just slough. — yn

1115 Sarah of CRA is talking to Walt P. to see if she should sample 6-8' section of SB-7-03A. She had sampled 4-6' section of SB-7-03 (original boring) previously. — yn

1117 Auger refusal @ 10.5'. — yn
No water. — yn

1124 Pulling out of SB-7-03A. — yn

1133 Done at SB-7-03A. — yn

1135-1205 Lunch break. — yn

1215 Getting set up at SB-8-03A. — yn

1230 Start drilling at SB-8-03A. — yn

Weather: Cloudy, slightly cooler than in the morning ~ 50°F. Light breeze. — yn

1233 0-2; Blow count 50/3" ~ 2-3" recovered Red-dark brown, organic soil, gravelly fine sand, slightly moist, dry at the top No odor no staining, weak structure. — yn

1248 2-4'. ~0.7' recovered. Grey (Lt) mottled Lt brown (yellowish) Silt w/ gravel stained w/ slight odor (slight stain)

1255 4-6'. ~1' recovered. Little brownish staining Lt brown & Lt grey mottled gravelly silt. slightly moist
No odor. — yn

1301 6-8; ~0.7' recovered. gravelly clayey silt, slightly moist Lt brown turns into Lt grey at bottom 2". — yn
No water yet, no odor no staining.

1304 Headspace 4-6' = 0 ppm — yn

SB 8-03A / PZ-1-03 10/23/03

6-8' ϕ ppm ——— yr

8-10' = ϕ ppm ——— yr

1308 No recovery for 10-12'. So ttn 3' ——— yr

1316 10.5' refusal at SB-8-03A.

CRA is sampling 8-10' section of SB-8-03A.

Late Entry 8-10' section was same as 6-8' section except no odor & no staining.

1320 Pulling out of SB-8-03A. ——— yr

1334 Decontaminating ~~at SB-8-03~~ decon area.

All three auger bits are being decontaminated.

Done at all the borings CRA was going to do on site (SB-7, 8 & 11). They will move to Tameling property now. ——— yr

1347 Per Walt of CRA, they will start installing Piezometers. Per workplan, they are decontaminating the stainless steel screen & PVC riser. ——— yr

They are not going on to Tameling property today as they have received authorization by the EPA to (approval) proceed at the three proposed piezometer locations on site property. They will go to the proposed piezometer location by the radio-~~tower~~ tower (SB-1-03) for PZ. They expect the bottom of PZ to reach ~ 15-16' bgs. ——— yr

1355 Done decon. ——— yr

1400 At PZ-1-03 (near the radio tower) ——— yr

1411 West of Board Longyear off site for the week. ——— yr

1418 0-2' of PZ-1-03. ~ 1' recovery.

0-2" Dark organic brown, organic smell, slightly moist. Some plant material.

2"- down weathered bedrock. Lt grey gravelly sand/silt, granule up to ~1" diam loose, slightly moist, no odor, no stain. ——— yr

PZ-1-03 10/23/03

1426 2-4' ; ~6" recovered (0.5'). Dry, Lt yellowish brown silt ~~w/ Lt grey mottle~~ no odor no staining stiff, but weak structure. ——— gr
V. little gravel. ——— gr

1436 4-6' ; ~3" recovered. Dry, Lt yellowish brown (mostly) w/ Lt grey (mottle) fine sand/silt w/ tr. gravel. No odor, no staining, trace clay.

1440 Per CRA, they are going to ~~use~~ put in piezos in 4.5" borings.

1452 Blow count 50 for 2". No recovery for 6-8'. Just slough came up in the spoon. Still no water. ——— gr

Note: Personal Data Ram is a particulate monitor CRA is not taking any PID on the section where SB-1-03 samples / PID readings were taken from since the borings (SB-1-03 & PZ-1-03) are close to ~~each~~ each other. ——— gr

1505 Scott Hansen of USEPA on site

1551 Drilling down to ~16'. Have started using water to drill down. No split spoon sampling since ~~no recovery~~ recovery has been extremely poor (~0%). ——

1625 Done showing the site to Scott Hansen of USEPA. ——— gr
Off site. ——— gr
TD=15.5' bgs. No water was used to drill this well, per the driller. They are definitely in the water. ——

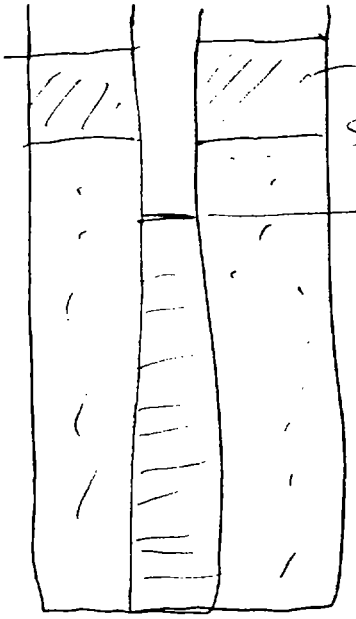
1646 Installing the PZ, sand is not thick with thick Dolomite paste. They will try adding ~5 gals of water to thin out the paste in the well annulus so that the sand

PZ-1-03 10/25/05

Can sink down to the bottom

1710 The [illegible] by [illegible] information on the site.

2.5' stick up Cut at 5', 3.5 bgs
-> Sand at 3.5' bgs ~~the~~ hole plug up to 6" bgs ~2' bentonite.



They are going to put bentonite and finish up on the well tomorrow morning.

Put a cap on top of the well w/lock (compression cap).

1727 Done at the site. Offsite.

Jeslie Hagman

Oversight - Soil Investigation

Y. Hagiwara 10/24/03

0715 WESTON (Y. Hagiwara) on site. —Yh
~~Yh~~ Board Longyear Mike & Ben are already on site. Wess will not be on site ~~this morning Yh~~ today —Yh
0735 Board has finished completing PZ-1-03. —Yh

Personnel on site
Mike Magnan } Board Longyear
Ben Price }
Sarah Benoit (CRA)
Yoshie Hagiwara (WESTON)

Weather: Slightly overcast (fog from the river) ~40°F. High expected ~ 55-60°F.

0750 Sarah of CRA on site. —Yh
0810 The plan appears to be to go on to the Tameling property and install soil borings instead of Piezometers on site. Sarah Benoit is on the phone w/ Walt P. to confirm that this would be fine. —Yh
0830 At SB-12-03, setting up. —Yh
CRA calibrated HNu w/ fresh air & 100 ppm isobutylene. —Yh
Calibrating Data Ram (particulate meter) w/ fresh air. —Yh
0849 Start drilling at SB-12-03. —Yh
0853 0-2': ~0.9' recovery. Dark brown Organic (soil. Gravel (dolomite) toward the bottom (~2") —Yh
Plant material, no odor, no stain. —Yh
Looks like coal cinder at the bottom w/ gravelly. —Yh
0858 2-4': No recovery. —Yh
0904 Headspace of 0-2 = 0 ppm

Start 10/24/03

Camera 3 END 10/29/03

Photolog

Photo	Date	Time	Description
1	10/24/03	0731	Done finishing up PZ-1-03
2	10/24/03	0750	PZ-1-03 & SB-1-03. PZ-1-03 is to the left & east. —yn
3	10/24/03	0800	Pulled out the outer casing of PZ-1-03. This is a temp piezo
4	10/24/03	0831.	SB-2-03 & SB-2-03A. SB-2-03A is to the right & East. —yn
5	10/24/03	0850.	Drilling at SB-12-03. —yn
6	10/24/03	1036.	10-12' core from SB-13-03.
7	10/24/03	1106.	SB-13-03, after drilling. —yn
8	10/24/03	1155.	Done at SB-14-03. South-west of ~~the~~ yn P-25 & P-255. —yn
9	10/24/03	1240.	Drilling at SB-15-03. —yn
10	10/27/03	1320.	Drilling at PZ-2-03 —yn
11	10/27/03.	1514.	Setting piezo at PZ-2-03. —yn
12	10/27/03	1525.	PZ-2-03 (temp piezo), from North. —yn
13	10/28/03	0809.	Done at PZ-3-03 (PZ-35)
14	10/28/03	0928.	Drilling at SB-16-03. —yn
15	10/28/03	1050.	Completed SB-17-03. —yn
16	10/28/03	1353.	4-6' Section (only ~2" recovered) of PZ-36. —yn
17	10/29/03	0900.	~~Comp~~ yn PZ-37, Completed on 10/28/03. —yn
18	10/29/03	1018.	Air drilling at PZ-37. —yn
19	10/29/03	1129.	Rock core recovered from the bottom of auger (~10' Bgs). competent rock, PZ-37. —yn
20	10/29/03	1452.	6-8' Section from PZ-38. Lt-med grey silt w/ oil trapped in some places, Oily sections are Lt brown colored. —yn
21	10/29/03	1607	Pulling auger out of PZ-38. Oil is seen (Lt brown) on the auger. —yn

SB-12-03 / SB-13-03 10/24/03

0905 Blow count 4, 4, 4, 4. very soft. (4-6) yr

4-6; ~1.5" recovery, wet, very soft silty clay/clayey silt grey. yr

Silt (clayey), plastic, wet at the very bottom. yr

No odor, no staining. yr

No headspace reading for 4-6' section

0912 6-8; ~0.7' recovered. ~~Light~~ medium ~~brown~~ clayey silt, stiff, odor, no obvious staining, moist, no water

0920 8-10; ~~Spoon refusal at 8 bgs~~ Spoon refusal at ~8.1' bgs. The driller thinks he is in the water. yr

0921 Headspace reading (SB-12-03) yr

6-8 = 2 ppm. yr

CRA will sample 0-2 & 6-8' sections, yr

0932 Done at SB-12-03. Moving over to SB-13-03

0936 weather: Sunny, clear sky, temp ~45°F breezy yr

0941 Start drilling at SB-13-03. yr

0944 0-2; 7, 9, 9, 12 - blow count, ~1.3' recovery. Dark organic brown soil (silt w/ gravel for the ~2-3" at the top. yr

stiff, clayey silt, moist, ~~light~~ yellowish brown, no staining, no odor below dark organic brown. yr

0953 2-4; ~1.2' recovery. Pale brown (yellowish) w/ ~~light~~ grey mottle yr

Silt (trace fine sand) yr

CRA will sample 0-2' section.

SB-13-03 1/24/05

Headspace reading
0-2 = 5ppm
2-4' = 4 ppm ——— ——— yh

1000 Surveyors on site (Billinger Lachi Associates, Inc.) ——— yh

1002 4-6: ~1.3' recovered. Gravelly silt, moist, stiff, gravels are bedrock fragments, WX-ed bedrock, lt. yellowish brown, no odor no staining. ——— yh

1005 Sarah of CRA is showing the surveyors boring locations. ——— yh

1010 6-8 = 32, 50/2" — blow count ~2" recovery SAA gravelly silt, ~~plastic~~ slightly more plastic, higher moisture content than above, moist, no odor, no staining. ——— yh

1013 Refusal at 7.5' bgs. → Auger refusal.

1020 CRA is collecting duplicate samples from 4-6' section. ——— yh

1025 8-10: No recovery, they decided to go down (try to) login w/ auger. ——— yh
~~Design~~ Does not appear that there was water at this interval. ——— yh

1034 10-12: Lt grey Gravelly clay/silt ~0.7' recovery, weathered bedrock, angular rock fragments. No odor, no stain, getting more moist toward the bottom. No water yet.
Headspace reading of SB-13-03.
4-6 = 0ppm ——— yh
6-8 = 0 ppm ——— yh

1043 12-14: No recovery, however the spoon was full of water, strong odor from the water. Stop here. Per driller, they estimate the water to be ~10'. ——— yh

SB-13-03 / SB-14-03 10/24/03

1142 Sarah is going to a store to get some ice for samples. Ice from yesterday has melted quite a bit. ——— JH

Headspace reading ——— JH

10-12 = 0 ppm ——— JH

1051 Sarah of CRA off site to get some ice. ——— JH

Drillers are pulling out of the boring SB-13-03. ——— JH

1107 Getting set up at SB-14-03. ——— JH

1114 Start drilling at SB-14-03. ——— JH

1119 ~~Black~~ JH 0-2; 1.5' recovered. top section (~0.5') is all Black, gravelly material. 0.5-2; slightly moist, silt, black. ~~Slight~~ odor. smooth, stiff, ~~rough~~ the black color might be staining but cannot determine as the color is almost uniform.

1123 2-4: ~0.5' recovered, no odor, black w/ some Lt Creamy brown in some spots gravelly stiff, silt ——— JH

1128 4-6: Slight odor, ~0.5' recovery Black, moist silt, weak structure not as stiff as above, seems like some soil is mixed here. ——— JH

1130 Headspace readings SB-14-03

0-2 = 0 ppm

2-4 = ~~0 ppm JH~~ 80 ppm

4-6 = 55 ppm

1133 CRA will sample 2-4 section for Lab analysis Auger is squeaking as it tries to penetrate down to 6' bgs. ——— JH

Late Entry Sarah Benoit of CRA came back on site at 1113. ——— JH

SB-14-03 / SB-15-03 10/24/03

1144 6.2' bgs -- Refusal (auger) no water. CRA taking PID reading at the auger opening PID = 180 ppm. ——— yz

PID = 0 ppm in the breathing zone. ——— yz

1148 Pulling out from SB-14-03. ——— yz

Note: There was fume & odor coming out of the auger when CRA measured PID at ~6.2'.

1155 Drillers are going to decon augers.

1207 Finished decontaminating what they would need to complete the next boring. ——— yz

1210 Having to SB-15-03. ——— yz

1218 Start drilling at SB-15-03. ——— yz

1220 0-2 in 0.5' recovery. Dark, organic brown dry silt, stiff, but weak. Some plant material, earthy odor. Trace gravel. N. staining. ——— yz

2-4: 50/2" No recovery. There was a piece of dolomite fragment (weathered) at the bottom of the spoon, preventing any core from going inside. ——— yz

1242 4-6: No recovery. The auger barely made it to 4' bgs. ——— yz

Headspace 0-2' = 0 ppm.

50/0" ——— yz

Drilling through weathered rock. ——— yz

1336 CRA ~~is sampling~~ 0-2' section of SB-15-03. sampled (Late Entry) ——— yz

1344 Refusal at 4' bgs at SB-15-03. ——— yz

1354 Collected a rinsate blank. ——— yz

1400 Done at the Taneling property. ——— yz

1405 Decontaminating augers etc. at the decon area. ——— yz

——— yz

1924/03

1310 Waiting for CRA to decide what time they are going to start on Monday.

1320 Asked Sarah of CRA if the surveyors are also performing wetland delineation as Sarah does not know. —— jm

1330 Per CRA, they will start around 11:30 on Monday. Done for the week. —— jm

Off site.

Jonathan Hoghara

Oversight - Soil Investigation

PZ-34 (PZ-2-03) Y. Hagiwara 1/27/03

1150 WESTON on site. CRA is already on site. Drillers are not on site yet.

1210 Drillers on site. ——— yh

Weather: Cloudy & windy, temp ~40°F High expected ~43°F ——— yh

Per CRA, they will start with piezometers on site. Since these piezometers are so close to the previous soil borings, CRA plans to blind drill to set piezometers. Air compressor is not on site yet. ——— yh

Personnel: Sarah Berovic (CRA)
Mike ~~Magnan~~ Mueller (Boart Longyear)
Ben Price (" ")
Yoshie Hagiwara (WESTON)

1225 Drillers are getting the rig & support equipments from the Tameling property (stored on Tameling property over the week-end) ——— yh

1233 Air Compressor on site. Unloading.
CRA is calibrating PID & DataRam (PID is HNu)

1300 Start drilling at PZ-2-03. ——— yh

1308 There is an odor to the soil cuttings. CRA is checking the breathing zone for organic vapor & particulates. Background reading.

1318 Still drilling at PZ-2-03. CRA checked for breathing zone readings. The HNu reading went up to ~3ppm for a fraction of second but the reading was not sustained. ——— yh

1328 At ~14' bgs at PZ-2-03. Surveyors on site.

1332 Found out that Mike's last name is Mueller not Magnan. ——— yh

Note: The CRA ~~bgs~~ project manager was on site briefly this morning. Per Sarah of CRA, the PM & WAHP. are at a meeting w/ DuPage County Water

PZ-34 (PZ-2-03) / PZ-35 (PZ-3-03) [illegible]
department. They will be backon site [illegible] the meeting.

1342 At 17' bgs at PZ-2-03. The drillers will have to go off site to get some decon water. (The screen & riser would have to be deconed prior to installation per workplan).

1344 Drillers off site.

1407 Drillers are still getting de[illegible] water.

1416 Drillers back on site.

1420 Decontaminating the screen & riser (stainless ~~screen~~ steel scr[illegible] & PVC riser) prior to use.

1430 Done decon. Start[illegible] ing the piezometer at PZ-2-03. The p[illegible]eter will ~~be~~ be set at 16 ft bgs. Water is expected to be ~ 10' bg[illegible] at this location.

1447 pouring about 5 gals of water down the boring.

1454 Adding ~~another~~ another 5 gal[illegible] water thin out the slurry at the bottom of the [illegible]nite (gw)

1502 The bottom of the well (pi[illegible]) set at 16 ft bgs.
16-4' Sand pack
4-0.5' bentonite seal

1523 Done at PZ-2-03.
The drillers will decon the [illegible] & some of the rods before moving to the next location (PZ-3-03).

1545 Almost done deconing.
Asked CRA the plan for tomorrow.

PZ-35 (PZ-3-03) 4/27/03

Due to the time change, CRA will try to start earlier tomorrow @ ~0700. Also per CRA, the work is anticipated to go on till next week. ——— yz

1552 Phoned Jim Pauli and left a message that the work at Lenz Oil site might extend into next week. ——— yz

1555 Walt Pechman on site. ——— yz

1620 Finished going over the plans for drilling. They will set protective casing & flushmount for Pieces on Township property. Drillers have started on PZ-3-03 (or PZ-35). ——— yz

1635 Walt Pechman off site. ——— yz

LATE ENTRY: Asked Walt Pechman if wetland survey is going to take place this week. ~~For bryn~~ According to Walt, the contractor for the wetland survey went ahead w/ the work prior to CRA's authorization. Therefore, the work is already done. CRA is trying to get the DuPage County out to check and see if they agree w/ CRA's contractor's assessment of the wetland.

1645 At ~ 17' bgs at PZ-3-03 (PZ-35)

1652 ~~Finished~~ packing up. Will set the piezometer tomorrow morning. ——— yz

1656 Done at the site. Off site. ——— yz

Joshua Hagstrom

Oversight - Soil Investigation

PZ 35 Y. Hagiwara 10/28/03

0700 Hagiwara of WESTON on site. Boart drillers are already on site. Sarah of CRA is not on site yet. —— yh

Weather: cloudy w/ slight breeze. rain expected in the morning ~43°F

Personnel: Sarah Benovic (CRA)
Mike Mueller (Boart Longyear)
Ben Price (Boart)
Yoshie Hagiwara (WESTON)

0705 Surveyors on site. —— yh

0719 Sarah of CRA on site. —— yh

0728 Setting screen & riser at PZ-3-03 (PZ-35) —— yh

(start work). —— yh

0735 Porta John service company came on site for servicing —— yh

0737 Trying to set the bottom of the well at 16' bgs. Water came in overnight. It is not expected that they will have to add any ~~addi~~ water to thin out the dolomite slurry as the other two locations.

0747 The bottom of the well is set at 16' bgs
Screen 6-16' bgs —— yh
Sand 16-4' bgs —— yh
Hole plug (bentonite) 4-0.5 bgs —— yh

0809 Done at PZ-35. —— yh

0811 Calibrating Hnu w/ ~~pre~~ span gas 100 ppm isobutylene

0817 Still packing up at PZ-35. —— yh

0827 Decontaminating. They will move to a soil boring location on Taneling property after decon. —— yh

0846 Raining. setting up at SB-16-

SB 16 03 / SB 17 03 10/28/03

0849 CRA ~~contractor~~ ground Data Gap Unit w/ freshair. ——— gz

1852 CRA's Sarah indicated that if they do not see any sign of impact, she is not going to collect any samples. ——— gz

0854 Start drilling at SB-16-03. ——— gz
Sarah is phoning Walt P. to see if it would be OK to not collect any samples if no sign of impact is observed. ——— gz

0856 0-2, 3, 8, 12, 10, 10 = blow count, ~1" of top gravel (fill) recovered. Almost no recovery. Dark brown, wet gravel.

0908 2-4 ~1.2' recovered. Dark brown, moist to wet silt (gravelly) ~~to ngz~~, ~~trgz~~ crushed weathered bedrock fragments at the bottom ~2" or so, Ltgrey w/ yellowish rust. ——— gz
PID (headspace) reading = 5 ppm ——— gz

915 4-6: So far nothing (Tbw count). ——— gz
CRA will collect a sample from 2-4' section ——— gz
(Sample # 32) ——— gz

125 CRA's breathing zone monitoring result all background

0940 Still drilling down (augering) to 10'. ——— gz
They decided to drill down to 10' w/o sampling 6-8 & 8-10' section. ——— gz

950 10-12': Only ~1" recovered. Fragmented weathered bedrock, white, angular pieces. The bottom of the spoon is wet. No petroleum odor. no sign of impact at the section recovered. ——— gz
Stop here. ——— gz

955 Pulling out of SB-16-03. ——— gz

1005 Moving to SB-17-03. ——— gz

015 Start drilling at SB-17-03. ——— gz

1017 0-2: No recovery. ——— gz

SB-17-03 10/28/03

1024 2-4; ~ 2-3" recovery. moist to wet layer Silt, med brown, some lighter tan colored sections/patches), plastic, slightly stiff Appears to be fill. ——— jn
Headspace = 5ppm. ——— jn
1029 4-6; No recovery after 50 blows for
1038 6-8; Wet. ~2" recovered. All crushed rock (dolomite) fragments. In water, Odor. No obvious staining in the fragmented section. Section above water table was not recovered. Stop here and start pulling out of this location. ——— jn
1041 CRA is sampling 2-4' section at SB 17-03.
1056 Back at the site. Decontaminating augers & rods. ——— jn
1113 Still decontaminating. Before starting on the next piezometer, they will try to move the air compressor onto the Tameling property. ——— jn
Late Entry; Rain stopped around 1000. ——— jn
Weather at 1115; Partly sunny w/ thick clouds in places. Cloud is thinning out to to high wind above. ~45°F some breeze
1125 Done decontaminating ~~screen~~ augers etc. Decontaminate screen risers for piezometers
1140 Attached air compressor to the rig. For, CRA they will take lunch & then move over to the Tameling property when they get back.
1145-1230 Lunch ——— jn
1230 Moving the rig over from the site onto the Tameling property (& air compressor). ——— jn
1235 Pouring rain & thunder. ——— jn
1250 On stand by. Waiting for thunderstorm to pass. ——— jn

PZ-36 10/28/03

1305 Thundering stopped and the rig + air compressor are on Tameling property. ——— JH

1318 Setting up at PZ-36 (PZ-4-05). ——— JH

This location is also a soil boring, therefore, they will sample continuously w/ spoon. ——— JH

1328 Start drilling (spoon) at PZ-36. ——— JH

1331 0-2': ~0.8' recovered. Per driller, a piece of weathered bedrock got stuck at the bottom of the shoe. Organic smell, dark brown organic soil ~~from~~ at the top 2-3", moist. Dry, stiff gravelly silt/fine sand, dark brown, brittle. ——— JH

~~ather~~ @ 1337 Sunny, light breeze, partly cloudy temp ~ 55°F. ——— JH

1337 Headspace reading for 0-2' section/ background. ——— JH

1338 CRA is collecting 0-2' section sample. — JH

Per CRA, they will be able to start on the residential property (at the corner) anytime, per Pete Tameling. ——— JH

1340 2-4': no recovery, a few pieces of wx bedrock fragments were caught in the spoon. No odor. ——— JH

1350 4-6': 50/2" - Hard count ~~through~~ ~2" recovered. Lt brown gravelly silt gravel sizes up to ~ 0.5" in diameter. No odor no staining. ——— JH

1403 6-8': ~1' recovered. Lt brown, dry silt/fine sand w/ ~ 45% gravel (rock fragments) 2-3" moist gravelly sand Lt w/ some clay looks like till. Loose, ——— JH

4-6' = ~~5 ppm~~ 1 ppm } Headspace
6-8' = 2 ppm

PZ-36 10/28/03

1410 8-10; No recovery. A piece of Rock fragment stuck at the bottom of the shoe. ——— yn

1418 10-12; ~0.6' recovered ~2" at the top looks wet. Staining (black) & odor, silty fine sand. Dark black staining at the bottom of 0.6' section, gravelly, slight moist, yellowish white w/ black stain, strong odor. Silty ~~meaty~~ material. CRA is sampling this section. ——— y

1426 10-12 = 3 ppm — Headspace PID

1428 CRA checked drillers' breathing zone. ~~No~~ background. ——— yn

1450 At 15' bgs. No more split spoon samples. It was too hard to try sampling ~~the spoon~~ w/ the spoon. It does not appear that there is much water. ——— yn

1451 The crew from other site for Boart Longyear on site to drop off some supplies for this job. ——— y

1503 CRA Sarah is checking w/ W. Pochron to see if they need to drill down deeper.

1510 Per Sarah of CRA, they are going down a few more feet (but not to go below 18') to see if they hit water. ———

1526 At ~18' bgs at PZ-36 location. ——— y

1532 They will set screen at 7-17' bgs

1555 Still setting the piezometer. ——— y

Sand: 17-5' bgs

Bentonite: 5-0.5 bgs

~~Hooyn~~ Screen: 7-17' bgs

1603 Per driller, there was water. ———

7/28/03

1609 Done at PZ-36. Will set up for tomorrow and be done for today. ——— Yn

1619 Moving the air compressor toward the next piezometer location. ——— Yn

1630 Back at the site. Done at the Tameling property. ——— Yn

Done at the site as far as general drilling work is concerned. They will finish decontaminating the augers etc. before getting done for the day. They will start at 0700 tomorrow morning. ——— Yn

1635 WESTON offsite. ——— Yn

Yashia Hagihara

Oversight – Soil Investigation

PZ-37 Y. Hagiwara 10/29/03

0700 Y. Hagiwara of WESTON on site. —yh
Neither the drillers nor the CRA are on site yet. —yh

Weather: Cloudy, windy, high expected in the 60's

0710 Sarah Benovic of CRA on site. Drillers are still not on site yet. Sarah is checking to see if they tried to phone her. —yh
No message. Will wait a little longer in case they are getting some decon water etc.

0738 Drillers still not on site. —yh

Personnel: Sarah Benovic (CRA)
Yoshie Hagiwara (WESTON)
Mike Mueller (Boart)
Ben Price (Boart)

0748 Sarah of CRA had spoken to the drillers. They went to the other site for some supplies. They will be on site soon.

0750 Sarah of CRA is calibrating HNu w/ fresh air & 100 ppm isobutylene cal gas.

0802 Drillers on site. Loading up. —yh

0816 On Tameling property. —yh

0818 At PZ-37 location. Setting up —yh

0825 Start drilling at PZ-37. —yh

0826 <6" recovered from 0-2' no odor. D. brown gravelly silt, stiff, dry to slightly moist, appears weathered. —yh

0831 Background PID is reading at 8 ppm on HNu (after calibration). Head space reading of 0-2' section = 1 ppm. —yh

Lunch Entry: CRA zeroed DataRam unit w/ fresh air before the work started

0835 2-4': ~9% recovered. Dark brown gravelly (~20-30%) silty clay, stiff, slightly moist

PZ-37 10/29/03

No obvious staining or odor. slightly moist
0845 Headspace reading at 2-4 = 1 ppm
0848 C&A informed that she noted a slight odor at the bottom of the spoon while sampling the section. ——— jm
0850 CRA Sarah also informed that since they are already in the weathered bedrock, they will not attempt to sample w/ split spoon unless the section seems soft enough to get recovery (w/ spoon). They will keep drilling w/ auger until they hit a soft (relatively) section at the desired depth. ——— jm
0910 At ~ 8' bgs, they will need to switch to air drilling. Pulled out the 4" auger.
0930 Setting up the air compressor (hooking up) ~~to the~~ jm for air drilling. ——— jm
0933 Resume drilling at PZ-37. ——— jm
0940 At ~10' bgs. Setting up for air drilling. ——— jm
(w/ 6" auger) ——— jm
0947 Start air drilling at PZ-37. ——— jm
Weather: Sunny, partly cloudy, starting to warm up. Less windy. ——— jm
1039 Still drilling at PZ-37. They will drill down to 16' bgs and see if there is any water. ——— jm
1050 At 16' bgs, the soil cutting is wet. Water is expected to be present. They will try to set the well between 15 & 16' bgs. ——— jm
1058 Pulled out the drilling rod. Lt grey sediment came ~~off~~ up on the rod. Strange odor, but not a petroleum smell. ~~This~~ ——— jm
1059 Per Walt of CRA (from Sarah), they will set

the screen at 5.5-15.5' bgs ——— yn
Sand - 3.5-15.5' bgs
Bentonite 3.5 ~~0.5' bgs~~ yn - ~1.5' bgs
This piezometer will be a flush mount th traffic purpose. ——— yn

1124 Competent rock core came out of auger ~ 10' bgs. Take a photo. No odor, ~~no apparent staining~~ No apparent staining observed. ——— yn

Late Entry: Drillers ordered a new compressor from the rental company. The specification (max pressure) does not meet what they normally use for this type of drilling. Having an air compresser that ~~can~~ has a higher capacity will shorten the drilling time. Also, ~~according~~ according to CRA, they will plan on starting on MW-ER well tomorrow so that CRA can send the soil cuttings for treatability studies etc.

1144 Checked to see if there was any odor from the soil cuttings in the drum. There is a slight odor. No obvious staining (PZ-37). ——— yn

1151 Done at PZ-37. ——— yn

1159 Back at the site. They will drop off the used augers etc. before taking lunch. ——— yn
They will decon after getting back from lunch ——— yn

1205-1235 Lunch. ——— yn

1235 Hagiwara back on site. Drillers & CRA are not back on site yet. ——— yn

1242 Sarah of CRA back on site. yn

1245 Drillers back on site. ——— yn

PZ-38 10/29/03

1250 Decontaminating augers. ——— gc

1255 Back at the Tameling property, while the helper is decontaminating. The driller is finishing up the flush mount for PZ-37 before moving over to PZ-38. ——— gc

1356 At PZ-38 location. Took a while to load everything to start work on the Tameling property. Unloading auger etc. ——— gc

1416 Start advancing spoon at PZ-38. ——— gc

1419 0-2: ~0.4' recovered. Dark organic brown topsoil, moist, plastic, slightly sandy, no odor, no staining clayey silt. Some Lt grey patches (tan-color).

1425 The Boart compressor onsite from the other site. They will use this one for now. The other crew is going back for the week.

1430 The other Boart crew off site. ——— gc

1431 2-4: ~1.5' recovered. Dark brown slightly plastic, moist clayey silt to ~~3'~~ 3' bgs. from 3' bgs, Silt (w/ some clay), moist, gravelly, Lt grey mottled w/ Lt yellowish brown, plastic, slightly stiff. No staining, no odor. ——— gc

CRA will sample 2-4' section of PZ-38.

Headspace Readings (PZ-38) ——— gc

1437 0-2' = 4ppm ——— gc

2-4' = 2.5ppm ——— gc

1438 4-6: ~1' recovered. Lt brown and Lt grey mottled gravelly silt. v. stiff. slightly moist Slight odor (non-petroleum) at the bottom of core. No obvious staining. ——— gc

1443 Headspace reading (PZ-38) ——— gc

4-6' = 0 ppm. ——— gc

1448 6-8: ~1' recovered, CRA air monitoring background. ——— gc

PZ-38 10/29/03

6-8 (cont) ; Lt to med grey silt, sheen (or oil) trapped ~~between~~ in sections (light tan staining), strong odor, some darker staining as well. weak structure but coherent as a core, ~~breaks~~ crumbles under finger pressure.

1455 CRA is sampling this section (6-8') Moist but not wet yet.

1456 Headspace reading (PZ-38) 6-8' = 500ppm

1500 8-10' ; ~4-5" recovered. med-grey ~~gravelly~~ v. stiff silt, strong odor, no obvious staining (petroleum odor). Some pieces of wx bedrock fragments.

1506 Headspace reading (PZ-38) 8-10' = 100ppm

1515 10-12' ; 50 for 3" - blow count Strong odor. ~2" ~~recovery~~ ~3" recovery chunky crushed bedrock, moist, no sediment.

Late Entry 1513 ; Pete Tameling (the owner) on site. CRA is showing the SB & PZ locations & explaining what is happening at the site.

1523 Walt Pechan of CRA on site.

1535 At ~15' bgs. Will set screen at 4-14' bgs at PZ-38.

Weather at 1538, Cloudy, damp, light breeze ~45°F.

1546 Added ~8 gals of water to thin the slurry at the bottom.

sandpack = 3-14' bgs
Bentonite = 1.5-3' bgs

PZ-38 10/24/05

Note: Pretty murkey sample is getting coming out on the auger. Appears that it is already below water table. There should be water. —yjn

1555 Discussing the plan for this area. They will check tomorrow tonight at this piezo, and see if there is any product in PZ-38. If there is something, they will try going south of this location. —yjn Looking around. —yjn

1621 MW-65 will be replaced and will be screened at 2.5-12.5' bgs. —yjn

1627 yjn 6" of sand above screen. The name will be RMW-65. To abandon, they will rip the well & pour bentonite. Per Walt, they might put a piezometer south of SB-14 location. Some obstructing pieces of heavy equipment. —yjn

1627 Done setting the piezo at PZ-38. Per Walt P., he will be on site tomorrow to collect a sample of product & groundwater at P-19 for waste characterization for waste disposal purposes. He will be doing this tomorrow afternoon. CRA will not be drilling VER locations for treatability/study analysis yet. They will complete all the SB & PZ locations prior to starting on VER & VP locations. —yjn It appears that the tocaly soil investigation phase would continue well into next week. —yjn

Late entry: Started raining ~1620. —yjn

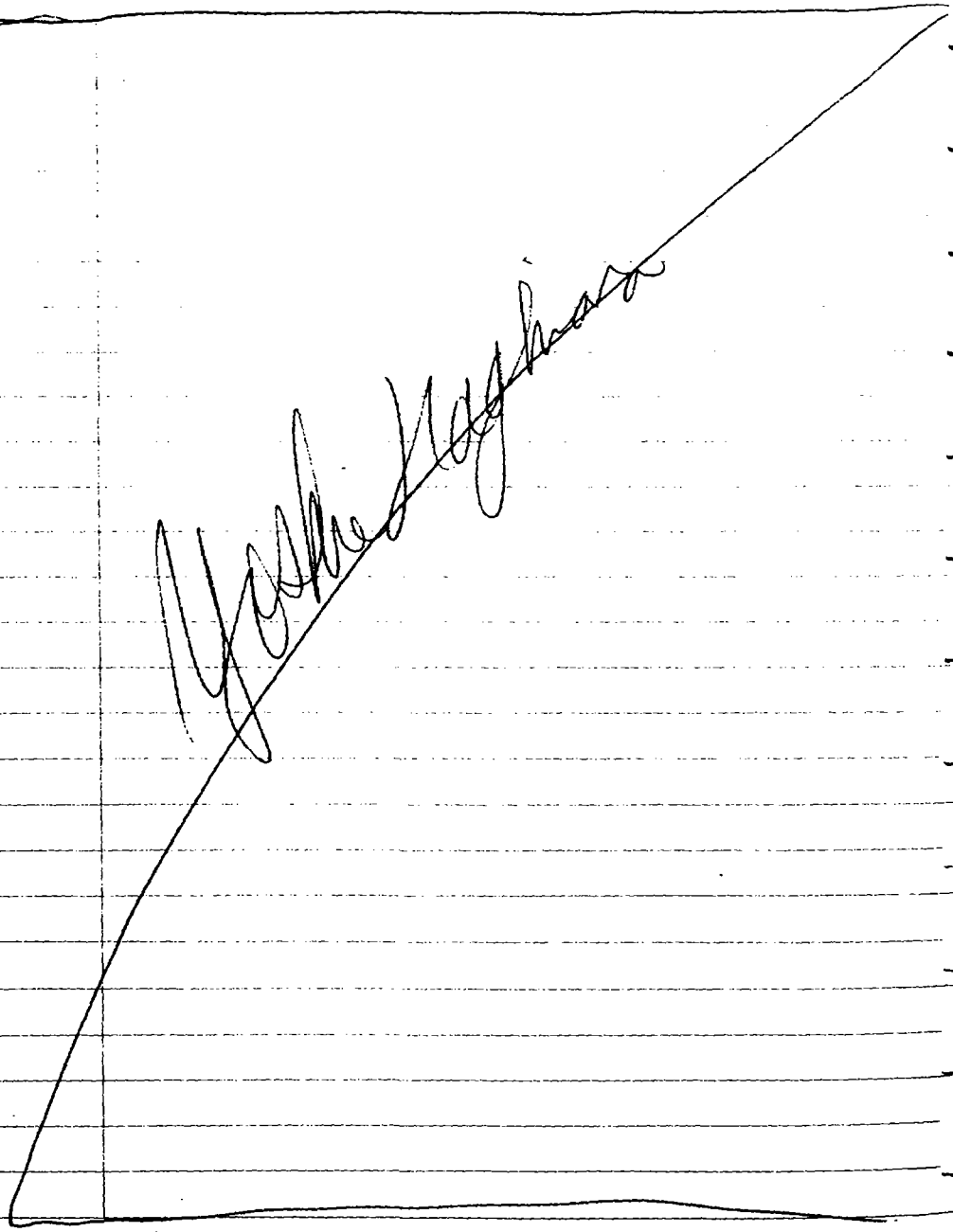
1646 They have not poured concrete on

10/29/03

flush-mount temp piezos.

1650 Walt Pochron off site. ——— yn

1700 WESTON off site, there is no more work - CRA & drillers will go off site after unloading etc. Will start again tomorrow at 0700. ——— yn



Oversight - Soil Investigation

Y. Hagiwara 10/30/03

0703 Weston on site. CRA not Boart on site yet. Go on Tameling property to check if drillers are at the Tameling property as the rig is on Tameling property. —yh

0712 Sarah Benoit of CRA on site. Per Sarah, drillers might be at the other site to pick up screens etc. due to increased scope of work (additional piezometers etc)

0733 Boart crew on site. They will still have to decon the augers. —yh

0750 At the Tameling property, CRA is calibrating PID & DataRam. —yh

Drillers are moving the air compressor back to the site. —yh

0810 Pete Tameling on site to look at his equipments that need to be moved to accomodate for the rig space. Drillers are deconing screens etc. before starting. —yh

0818 At PZ-38 location, CRA will check for the presence of oil at PZ-38 w/ an interface probe. —yh

PZ-38 (Interface probe by EnviroSupply Service, Inc.)
- odor when the well is opened.

0825 DTW = 5.67' Toc
TD = 12.78' Toc extremely silty
slight odor. —yh

It appears that there is trace product at the top of the piezometer. The interface probe almost made the noise indicating oil. Not enough for solid oil beep. —yh

Late entry: Surveyors came on site ~0800. —yh

0845 Done decon.

0902 At the Tameling property, Pete Tameling is reworking the ramp so that the rig can go down.

in to the wooded area in the back. While Pete is working on the ramp, the drillers are cutting down small trees & shrubs to get to the PZ south of P-25 & SB-14-03/locations. ——— yn

0922 At SB-18-03. CRA decided to start on a ~~yn~~ soil boring while the access for the two additional piezometers are being worked out. ——— yn

Personnel on site:
Sarah Benovic (CRA)
Mike Mueller (Boart)
Ben Price (Boart)
Yoshie Hagiwara (WESTON)

Weather: Clear, Sunny ~55°F, high expected ~68°F. ——— yn

0928 Start drilling at SB-18-03. ——— yn

0931 0-2': ~0.5' recovered. Dark brown clayey silt, dry to slightly moist, stiff some Lt brown patches, some organics at the top. No staining, no odor, low plasticity. ——— yn

0936 Headspace reading (SB-18-03) ——— yn
0-2 = 0 ppm ——— yn

0941 2-4': ~1.1' recovered. D. brown (organic) clayey silt (soil) w/ some plant material. dry to slightly moist, stiff, but weak, crumbling w/ finger pressure. Trace gravel. Med yellowish brown silt w/ some gravel at the bottom 1".

0943 2-4' = 2 ppm headspace reading

0948 4-6': ~1' recovered. CRA is sampling 2-4' section of SB-18-03 for Lab analysis.

SB-18-03 10/30/03

4-6; Lt to med brown, gravelly silty fine sand. No staining, no odor. Moist, weak structure. Weathered bedrock. ——— yn

0954 6-8; No recovery, a piece of bedrock fragment stuck at the bottom of the spoon. CRA will sample 4-6' section of SB-18-03 for lab analysis. ——— yn

Drilling in weathered bedrock. Scraping at the bottom w/ auger. ——— yn

0957 Headspace reading 4-6' = 0 ppm. ——— yn

0959 Per CRA, they will most likely start on the piezometers after SB-18-03. ——— yn

1001 ~ 8' bgs ~~of~~ yn at SB-18-03. They have not been able to go down very far. Will stop if they cannot get through for another 2 minutes or so. ——— yn

1008 CRA Sarah called auger refusal at ~7' bgs. The auger appeared to be moving, however Sarah does not think they will get any sample by continuing. Start pulling out of SB-18-03. ——— yn

1022 Done pulling out of SB-18-03. ——— yn

1032 Moving to SB-19-03. They will go to the old lady's yard before moving to the piezos in the wooded area. ——— J

1056 Start drilling at SB-19-03. ——— yn

1058 0-2; ~0.8' recovered. Dark organic brown, gravelly silt/fine sand w/ some clay, stiff, slightly moist, no odor, no staining some black pieces, coal??, plant material at the top

1102 Headspace 0-2' = 0 ppm ——— yn

Note: The top section has been hand-dug for the purpose of surface restoration. ——— yn

Photo log ② - Camera 3 YH 10/30/03

Photo	Date	Time	Description
22	10/30/03	1005	Drilling at SB-18-03.
23	10/30/03	1123	6-8' section of SB-19-03 weathered bedrock. YH
24	10/30/03	1253	Drilling set up at SB-20-03 (in front of the house & fence) YH
25	~~10/04~~ YH	10/30/03	1358. SB-19-03 location.
26	10/30/03	1406	~~SB-21~~ YH PZ-39 location, setting up to drill here. YH

Yvette Hagbarg

SB-19-03

10/30/03

1106 2-4': 50/4" - blow count ——— JH
~0.6' recovered. Dark organic brown, stiff silt w/ some clay ~~to~~ for the top 2-3".
Lt grey & Lt yellowish brown mottled gravelly silt, moist, coherent, slightly stiff to lt weak structure, no staining, no odor.

1109 2-4' = 5 ppm Headspace reading. ——— JH

1111 4-6': No recovery. A piece of rock fragment was stuck at the bottom of ~~the~~ spoon. ——— JH
CRA is collecting a sample from 2-4' section of SB-19-03 for lab analysis. ——— JH

1121 6-8'; ~1' recovered. Slight odor.
Lt. yellowish brown gravelly silt/fine sand w/ trace clay, rock fragments are angular
No obvious staining although there is a black spot at the bottom. Weathered bedrock.

1126 8-10': 50 for nothing No recovery, the tip of the spoon was starting to get wet. ——— JH

1126 6-8' headspace = 0 ppm ——— JH

1131 No recovery from ~~8 to 10~~ 10-12' bgs. They will Stop here at 10' (auger) bgs. Since there was absolutely no core in the spoon at 10-12'.

1133 Air compressor rental company on site to pick it up from the site. ——— JH

Drillers are pulling out of SB-19-03. ——— JH

1140 Done restoring the surface of SB-19-03.
They will move over to the other soil boring location in the old lady's yard

150 Breaking for lunch ——— JH

220 Back from lunch. ——— JH

230 CRA back on site. ——— JH

235 Drillers back on site. ——— JH

245 Walt Pochron of CRA on site. ——— JH

SB-20-03 1/30/03

1248 Setting up at SB-20 03.

1253 Start drilling at SB-20-03.

1255 0-2: ~1' recovered. Slightly [illegible] organic brown silt, gravelly, slight [illegible] but weak, some reddish patches ([illegible] zones) No distinctive odor, no [illegible]

1302 2-4: ~1' recovered. Slight [illegible] the bottom. Gravelly silty [illegible] (some fine sand), moist, [illegible] & pale yellowish brown mottle staining.

1305 Headspace readings
0-2' = 4 ppm
2-4' = 3 ppm

1310 4-6: ~1' recovered. Lt pale [illegible] gravelly silt, pale yellow [illegible] slight odor, gravel up to [illegible] CRA is sampling 0-2' section [illegible]

1317 6-8: ~6" recovered moist to V. [illegible] clayey silt, Lt brown (pale), coherent but weak.

1320 4-6' = 2ppm
6-8' = 2ppm

1323 8-10: SAA ~4" recovered [illegible] No odor, no staining.

1324 CRA will sample 6-8' sect[illegible]

1330 Pulling out of SB-20-03.

1335 Weather: Sunny, a few clouds, [illegible] (from west) ~ 65-70°F.

1400 Done decon & loading. Moving [illegible] They are planning on setting this [illegible] 13' bgs.

1407 Setting up at PZ-39. Walt P. is

PZ-39 10/30/03

Sampling oil & water for waste characterization
1410 for HA, they are going to skip spoon sampling
0-2' interval since they are going through
asphalt. ——— yz

1423 2-4: ~4" recovered. Dark brown organic
silty clayey silt, some rock fragments
at the bottom, slightly moist to dry,
gravelly, no odor, no staining. ——— yz

1430 4-6: ~0.7' recovered. Gravelly clayey
silt, lt yellowish reddish brown, some large
Dolomite fragments. No odor, no staining.
Sampling 4-6' section. ——— yz

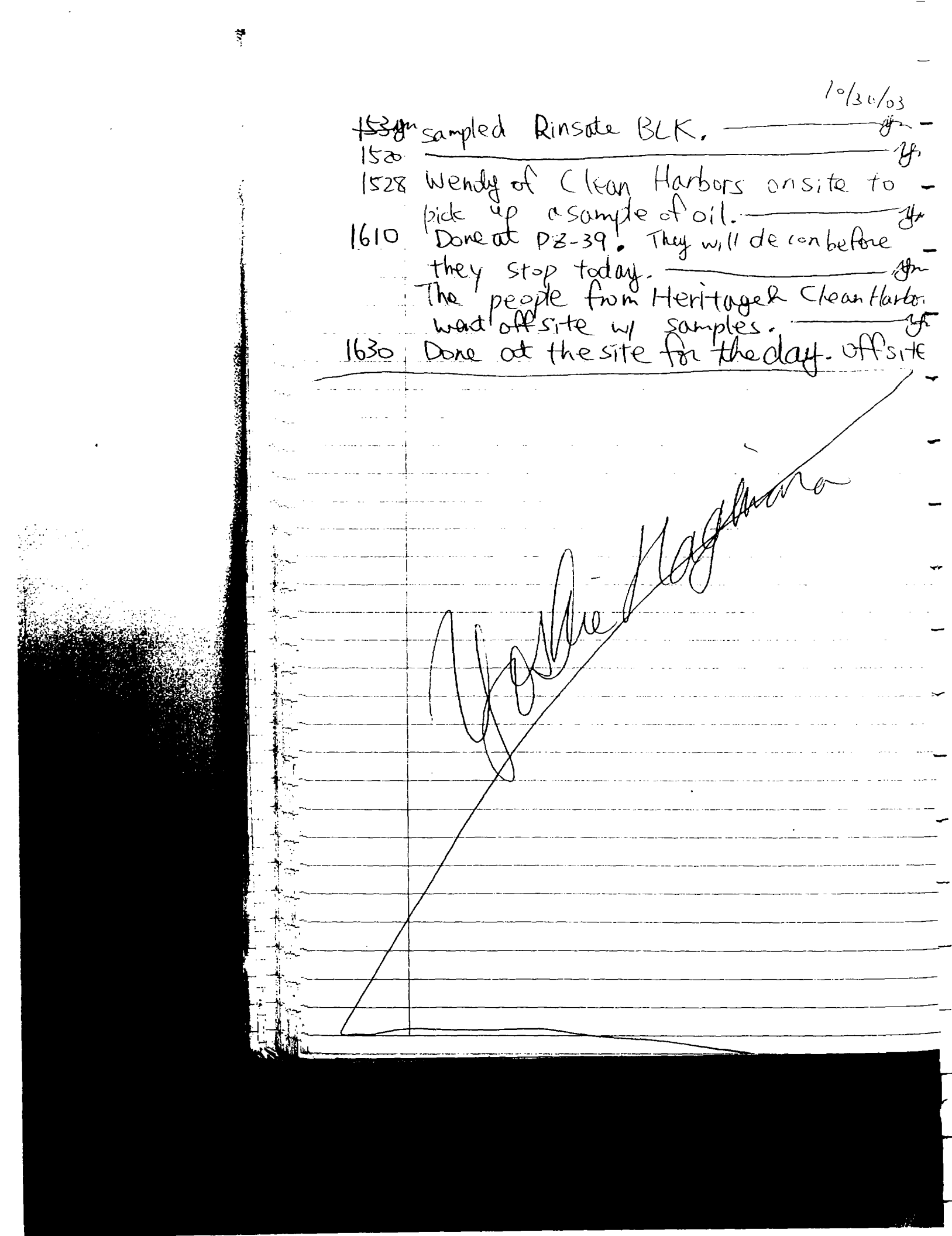
1440 6-8: ~4" recovered. Gravelly (clayey)
silt, moist, slightly stiff, no staining, no odor
Headspace reading at PZ-39. ——— yz
2-4 ~~0-2 yz~~ = Ø ppm
4-6 ~~2-4 yz~~ = Ø ppm
6-8 ~~4-6 yz~~ = Ø ppm

1449 8-10: 50 ft 4" blow count only ~2" recovered
Same as above, less gravelly, no sign of
impact. Moist. ——— yz
They will try to install this piezo at 13.5' bgs

1455 8-10' = Ø ppm —— Headspace reading
1457 10-12: ~1.5" recovered, a piece of rock
was stuck at the bottom, lt grey silt,
slightly clayey w/ some coarser sand,
wet some gravel, water.
1458 Sampling 8-10' section for lab analysis — yz
Done spoon sampling will just drill down to
set the well. ——— yz
They will try going down to 15'
(screen ~15') Sand = 4-15' bgs
Bentonite = 1.5-4' bgs

10/30/03

~~1530~~ sampled Rinsate BLK.
1520
1528 Wendy of Clean Harbors onsite to pick up a sample of oil.
1610 Done at DZ-39. They will decon before they stop today.
The people from Heritage & Clean Harbors went offsite w/ samples.
1630 Done at the site for the day. offsite



Oversight - Soil Investigation

RMW-6S Y. Hagiwara 10/31/03

0655 WESTON on site. Drillers & CRA are not on site yet. ——— yh

Weather: High expected ~65°F. Cloudy. light breeze ~55°F at 0700. ——— yh

Personnel: Sarah Benoit (CRA)
Mike Mueller (Boart)
Ben Price (Boart)
Yoshie Hagiwara (WESTON)

0709 Walt Pochron of CRA on site. ——— yh

0713 Drillers on site. ——— yh

0722 Sarah Benoit of CRA onsite ——— yh

Drillers are setting a drum for oily water for Walt. He will be ~~development~~ developing new piezometers today. He will go and check PZ-38 (after development) for the presence of product before installing a piezometer south of it. ——— yh

0735 Sarah is not sure which location they are going to start on.

Late Entry: Surveyors came on site ~0730

0745 On Tameling property, Walt Pochron is developing PZ-38. ——— yh

0750 Received a phone call from Om Patel regarding the e-mail concerning borings south of P-25 / SB-14-03 & PZ-38.

0756 At MW-6S location, finished abandoning MW-6S. ——— yh

0808 Start drilling at RMW-6S. ——— yh

0812 0-2: ~0.7' recovered. Dark organic brown sal clayey silt, slightly plastic, moist. ——— yh

Note: RMW-6S will be set ~5 ft south of MW-6S

Late Entry: CRA calibrated OVM580B & DataRam at 0758. ——— yh

10/30/03

~~1530~~ sampled Rinsate BLK.

1520

1528 Wendy of Clean Harbors onsite to pick up a sample of oil.

1610 Done at DZ-39. They will decon before they stop today.
The people from Heritage & Clean Harbors went offsite w/ samples.

1630 Done at the site for the day. offsite

Overnight - Soil Investigation

RMW-6S Y. Hoginara 10/31/03

0655 WESTON on site. Drillers & CRA o'le not on site yet. ——— yh

Weather; High expected ~65°F - Cloudy, light breeze ~55°F at 0700. ——— yh

Personnel; Sarah Benoit (CRA)
Mike Mueller (Boart)
Ben Price (Boart)
Yoshie Hoginara (WESTON)

0709 Walt Pochron of CRA on site. ——— yh

0713 Drillers on site. ——— yh

0722 Sarah Benoit of CRA onsite ——— yh

Drillers are setting a drum for oily water for Walt. He will be ~~development~~ developing new piezometers today. He will go and check PZ-38 (after development) for the presence of product before installing a piezometer south of it. ——— yh

0735 Sarah is not sure which location they are going to start on.

Late Entry; Surveyors came on site ~0730

0745 On Tameling property, Walt Pochron is developing PZ-38. ——— yh

0750 Received a phone call from Om Patel regarding the e-mail concerning borings south of P-25 / SB-14-03 & PZ-38.

0756 At MW-6S location, finished abandoning MW-6S. ——— yh

0808 Start drilling at RMW-6S. ——— yh

0812 0-2; ~0.7' recovered. Dark organic brown soil clayey silt, slightly plastic, moist. ——— yh

Note; RMW-6S will be set ~5 ft south of MW-6S.

Late Entry; CRA calibrated OVM580B & DataRam at 0758. ——— yh

Camera 4

Photo log (1)

10/31/03 –

Photo	Date Time	Description
1	10/31/03 0805	Pulled out ss. screen, bent at the top (left). – yn
2	10/31/03 0805	Abandoned MW-65 (Bentonite) below the topsoil. – yn
3	10/31/03 0808	Setting up at RMW-65 (replacement). – yn
4,5	10/31/03 1032	Bailing (developing) PZ-3
6	10/31/03 1128	Finished PZ-39 (w/ concrete)
7	11/3/03 1220	Purge water from PZ-34. – yn
8	11/3/03 1256	RMW-65. Well is opened. Standing water was present inside & outside of flush-mount casing. No concrete pad was put in on Friday. – yn
9	11/3/03 1413	Purging set up at RMW-65. – yn
10	11/3/03 1440	Finished PZ-38 w/ concrete pad. – yn
11	11/3/03 1500	Drilling set up at SB-21-03.
12	11/3/03 1538	Core from SB-21-03 at 6-8' bgs. – yn
13	11/4/03 0752	Setting piezometer at SB-21 PZ-40. – yn
14	11/4/03 0934	Drilling at VP-4. – yn
15	11/4/03 1144	Sampling 8-10 section for Encore (VOCs) – yn
16	11/4/03 1311	At VER-1. Soil cuttings are slurry, extremely saturated. – yn
17	11/4/03 1410	Drilling at VER-1, facing south (from north). – yn
18	11/5/03 0726	Lowering the screen at VER-1. – yn

10/31/03

0819 2-4 i ~ 1" recovered: Pieces of rock fragments (dolomite) ——— yr

No odor, no staining, moist. ——— yr

0825 Drilling down to 4' bgs, a core (~ 7-8" long) of dolomite came up. Already in weathered bedrock / bedrock. ——— yr

0829 Going down 4' w/ auger. Will not try to sample this section. Too hard. Walt Pochron is at PZ-37, developing w/ a bailer. ——— yr

0834 At ~ 5-6' bgs, the soil cuttings are starting to get wet. Most likely water at 5-6' bgs (still dry soil cuttings at 4' bgs). ——— yr

The soil cutting looks like weathered rock, not the actual bedrock. ——— yr

0842 Walt Pochron at RMW-6S. Developed PZ-38, PZ-37, PZ-36. ——— yr

PZ-37 had water up to ~ 6' TOC. This PZ may not be useful in spring. ——— yr

Also, they will be installing a piezo south of PZ-38. Walt saw the sign of oil while bailing the PZ-38. For RMW-6S, they will be putting a stainless steel riser instead of a plastic one. ——— yr

About 5 gals of water was purged at each one of PZ-36, 37 & 38. ——— yr

0854 Almost at 12.5' bgs, slurry is coming out of boring. Pretty wet & still weathered bedrock). ——— yr

0859 Since this is getting pretty wet, they will try and set this at 2-12' bgs. The boring was drilled down to 14' bgs. ——— yr

0900 Pete Tunelling at RMW-6S ——— yr

RMW-65 / PZ-39 10/31/02

0907 Adding 4 gals of water to RMW-65 to thin out the slurry. ——— yn

0911 Cutting the S.S. riser. ——— yn

Note: Per Walt, Sarah is going to try developing PZ-33 & PZ-39 today. ——— yn

Well construction
2-12' = screen
1.5-12' = sand (bottom is 14')
0.5-1.5 = Bentonite
Total of 10 gals of water was added to the well. ——— yn

0944 VER locations will be moved slightly per the property owner's (Pete Tamelling) request. ——— yn

0950 Finishing up at RMW-65. ——— yn
This will be it for drilling work today. Sarah will start developing a few Piezos when Walt P. goes off site. ——— yn

1008 Walt Pochron off site. ——— yn
Drillers are decontaminating & also finishing up all the piezometers (flush mounts) w/ concrete at the top (surface). They will also cut the trees around VER area South of the Jeans Road. ——— yn
They will start on VER & VP wells next week. ——— yn

1022 DTW = 14.03' TOC at PZ-39. ——— yn
TD = 14.68' TOC
They will be developing ~~the~~ well w/ a plastic bailer. ——— yn
Very little water is present at PZ-39.

1030 Very little water is coming into the

PZ 33 development 10/31/05

bailer. ——— JH

1034 PZ-39 is dry. ~50mL purged out of this well. ——— JH

1041 Done at PZ-39. Moving to PZ-33

1045 At PZ-33, decontaminating interface probe before starting development

1047 DTW = 12.31' TOC
TD = 17.62' TOC soft bottom
Murkey, very soft bottom. ——— JH

1051 Surging PZ-33 w/ a weighted plastic bailer). ——— JH

1056 Start purging PZ-33. ——— JH

Lt greyish, murkey water. ——— JH

1100 ~2 gals purged so far, there is a slight sheen on top of the water in the bucket.

1105 5 gals of water was purged. Slophare. The water is still cloudy. ——— JH

CRA is discarding purge water. ——— JH

Note Entry: No water level measurement was taken prior to MW-65 abandonment this morning.

111 No information on TD is collected after development at PZ-33. ——— JH

Done at PZ-33. Moving to PZ-34. ——— JH

714 At PZ-35. ——— JH

119 DTW = 10.30' TOC
TD = 17.29' TOC Strong odor
Med grey silt, soft bottom. ——— JH

124 Surging PZ-35. ——— JH

126 Stop developing PZ-35 to go over the New VER area to create access.

730 Back at PZ-35, Resume. ——— JH

32 Start purging. Odor is noted in the purge water. ——— JH

10/31/03

1143 Done purging 5 gals at PZ-35 Water is still murky. ——— yh

1147 Drillers are clearing the VER area. They have finished ~~the~~ the flush mount on PZ-38 & PZ-39. PZ-37 & RMW-65 still need to be finished. Drillers do not have enough concrete these two piezos. ——— yh

1152 Drillers are done. ——— yh
Sarah of CRA will stop here. She will be starting at ~1000 on Monday. ——— yh

1155 Drillers off site. ——— yh

1200 Off site (WESTON). ——— yh

1210-1250 Lunch ——— yh

1356 Back at VHI after dropping of cameras for development. ——— yh

Yoshie Hagihara

Oversight - Soil Investigation

Y. Hagiwara 11/13/03

0855 WESTON Leave VHL for site.

0955 Received a phone call from Sarah of CRA that she is running behind and that she will most likely be on site in an hour or so.

1000 WESTON on site.

Weather: Rainy, it is expected to rain steadily all day today ~50°F.

Surveyors are on site.

030 CRA not on site yet.

106 CRA not on site yet.

130 Sarah Benovic of CRA on site

131 Boart Longyear crew from the other site on site to drop off some drums & also pick up the truck w/ air compressor

135 Unloading drums.

740 Done unloading drums. Moving onto the Tameling property.

748 Board off site.

Per Sarah of CRA, she is going to develop PZ-34 now before the drillers come on site, and then consider developing PMW-65 when the drillers come on site.

758 PZ-34

DTW = 11.95' TOC

TD = 18.2' TOC Sdy bottom, Ltgrey silt, strong odor.

806 Drillers on site.

807 Start purging Pz-34.

Purge water has sheen inside a bucket.

815 Drillers off site to pick up some screens & water.

820 Done purging PZ-34. A total of 5+ gals purged.

RMW-6S. 11/3/03

1224 Decontaminating the interface probe. CRA will move to RMW-6S and decon the well. ——— yn

1236 Surveyors on site. ——— yn

1237 CRA (Sarah) & WESTON (Hagiwara) on Tameling Property. ——— yn

1238 At RMW-6S. ——— yn

Personnel on site;
Sarah Benovic (CRA)
Mike Mueller (Boart Longyear)
Wess Inhoff (Boart Longyear)
Yoshie Hagiwara (WESTON)

1252 Opening the well RMW-6S after emptying water from the top of the well. It was full
DTW = 1.85' TOC
TD = 10.40' TOC V
——— yn b

1555 Sarah Benovic calling (phone) Walt P. at the office to obtain directions

1304 Per Walt P. they will p
developing the well. ——— yn

1338 Calibrating YSI 556 unit for pH
conductivity - pH at 7, 4&10 & cond
The water truck ~~at~~ is st
on site (too wet) (Drillers are b
site). They are going to pull it out of the rig. ——— yn

So far ~ ~~70~~ gals of water has been purged out of RMW-6S. ——— yn

It appears that there is water running down the casing from the surface. The well is open w/ the whale pump yn

RMW-65 / SB-21-03 11/3/03

inside. However, Sarah is waiting for the drillers to deliver additional Poles (Buckets) to purge into. —yn

1346 ~~pH = yn~~ —yn

~~Cond = yn~~ —yn

Finished calibrating w/ 7000 µS (cond.) —yn

1.37 gals = 1 well vol. at RMW-65.

T350 At ~7 gals purged, pH = ——

Cond = ——

Temp = 13.75

1355 The pH probe on YSI is not working. Sarah is trying to troubleshoot. —yn

1400 Got another bucket & ~~started~~ resume purging at RMW-65. —yn

T414 ~~Not yn~~ ~15 gals purged at RMW-65. No parameters were collected. The well was not surged (quite a bit of silt was purged out, however) prior to the start of purging. —yn

Per Sarah, the 4-wheeler ~~not yn~~ does not start (Board). —yn

Sarah is packing up at RMW-65. —yn

Note: "parameters" earlier meant water quality parameters at RMW-65. —yn

1452 Moving over to SB-21-03 (southeast of SB-14-03). —yn

1456 At SB-21-03. Getting set up. —yn

CRA is calibrating HNu w/ zero air & 100 ppm isobutylene. —yn

1523 Start drilling at SB-21-03. —yn

1605 ~~Not yn~~ 0-2'; ~6" recovered. asphalt-mixed fill. Dark brown. —yn

Other: Breezier & colder temp ~40°F, cloudy, rain stopped earlier. —yn

SB-21-03 11/3/03

1510 2-4: ~~Lt~~ ~7-8" recovered. Lt brown & d. brown mixed clayey silty soil, fill.

1520 4-6: ~6" recovered, dark organic brown moist silt. A piece of bedrock (wx) was stuck at the bottom of the spoon.

Note: 2-4 Section was plastic & moist.

2-4' = ϕ ppm } Headspace
4-6' = ϕ ppm } reading

1525 CRA will collect a sample from 2-4' section where a native section appears to be present(?) — Med to Lt brown silt.

1532 6-8: Lt to Med grey crushed bedrock wet, strong odor although no dissimilar staining (the grey color may be from the product, but the color is homogeneous) water. ~2-3" recovered.

1540 CRA is going to put a piezometer at this location.

1546 Strong odor is coming from the soil cuttings — chunky (w/ bedrock) slurry.

1557 ~12' bgs. They will set the screen at 3-13' bgs.

1611 At ~12' bgs, added ~4 gals of water down the boring.
The soil cuttings that came up from the bottom (white slurry, extremely wet) does not have any odor. Stop here w/o setting the piezo & let water come in overnight.

1614 P-25S was set at ~11.7' bgs.
Done for the day. The driller is going to try starting the 5-wheeler.

11/3/03

1619 Sarah Benoit received a call from Walt Pochron. Per Walt, CRA will try to purge ~~another ??? gals~~ more water (to develop the well) until the water clears at RMW-6S.

7635 Done at the site. Will start at 0700 tomorrow morning.

7637 WESTON offsite.

Oversight Soil Investigation

SB-21-03/PZ-40 Y. Hagiwara 11/4/03

0700 WESTON on site. Drillers are already on site getting ready to go on Tameling property w/ filter pack & seal material for the SB (converted into PZ) from yesterday SB-21-03/PZ-40.

0703 On the Tameling property.

Weather: Cloudy, ~55-60°F, not much wind, thunder showers in the forecast

Personnel: Sarah Benovic (CRA)
Mike Mueller (Board Longyear)
Wess Inhoff (Board Longyear)
Yoshie Hagiwara (WESTON)

0716 Sarah of CRA on site.

0722 Per Sarah, they cannot get a replacement water quality meter b/c all the other water quality meters are out (office-CRA). Sarah will see if she can fix the probe (pH).

0724 Start setting temporary piezometer
Screen = 3-13' bgs (PZ-40/SB-21-03)

0726 Sarah is trying to calibrate the YSI unit. It appears that both conductivity & pH are not working properly.

0727 Calibrating HNu w/ fresh air (zero) & 100ppm Isobutylene.
Sand = 2.5-14' bgs
Bentonite = 1.0-2.5' bgs
Concrete pad above 1.5'

0805 Done at SB-21-03/PZ-40 except for concrete pad. CRA is trying to figure out where to move next. The driller is not sure if the rig will make it in and out of the area ~~behind~~ behind PZ-38 location.

VER/VP well installation

VP-4 11/4/03

0810 Checking out the VER & VP locations that are on site. ——— yn

0820 CRA will not go to do the last P2 location today. There is a chance that they on the rig can get stuck. They will start on VP locations located on site property. ——— yn

835 ~~At~~ Back on site property. Moving to a VP location. ——— yn

0842 At VP-4 location (~10' S of VER1) Clearing some of the stubs around for a better access. ——— yn

48 Getting set up at VP-4. ——— yn

Drill down to 11' & go to 10.5' bgs? ——— yn is the plan. Walt P. is going to come out shortly for the VER well soil cutting collection. ——— yn

0857 Pouring rain started. ——— yn

910 Thundering & lightening ~~seen~~. ——— yn

928 Rain stopped. ——— yn

0931 Start drilling at VP-4, blind drilling down to 11' bgs. ——— yn

Weather: Cooler w/ some wind / breeze. ~55°F.

0938 Asked CRA what the plan is for developing RMW-6S. Walt Pochron is going to check if he can get a unit out when he comes onsite later today. ——— yn

0949 Almost 10' bgs. ——— yn

953 Porta John Company on site for servicing.

0954 At 11' bgs. ——— yn

1000 Walt Pochron on site. ——— yn

Odor from the groundwater. ——— yn

1002 Decontaminating the PVC screen (5') & riser (~10' will be cut) prior to installation. ——— yn

Sand will come up to ~4' bgs.

11/4/03

Screen = ~~10.5~~ 11 - 5.5' bgs
Sand = 11 - 4.5 bgs
Bentonite ~~grout~~ = ~~3.5~~ 4.5 bgs (1' of Bentonite chips)
Cement-Bentonite 3.5 - surface
~~Walt is on~~ Walt brought the logbook (Sarah had forgotten it at the office on Monday) and a pH-Cond. meter. ——— yn

1025 Sun is trying to come out. Slightly warmer. ——— yn

1035 Moving over to VER location VER-1. They will be collecting ~~bi on~~ samples for biological parameters, etc. (as mentioned in the work plan) from above the water table and treatability study samples ~~once on~~ at smear zone. ——— yn

1042 Moving to VER-1. ~~Cement grout on~~ Clearing vegetation for access. ——— yn

1056 Start drilling at VER-1. ——— yn

1059 0-2: Dark organic brown / black, ~~mud on~~ V. wet gravelly silt. ~2.5" recovered. pieces of bedrock at the bottom so for 4' - blow count. ——— yn

2-4: 22-27-38-49 - blow count
~1' section recovered. Moist to wet gravelly silt / weathered bedrock ~~pat on~~ tan colored ~~to~~ ~~on~~ most of the ~~wet~~ except the bottom 1" Lt grey, slight ~~on~~ odor. ——— yn

1119 4-6: No recovery 50/1" - blow count. ——— yn

1134 6-8: ~0.7' recovered Gravelly slightly clay silt, moist, Lt grey & tan colored. Wood debr CRA is sampling this section for ~~Nitrate~~ Nitrite ammonia etc., grain size will be collected from 2-4' section. ——— yn
Some of the core ~~on~~ ~~on~~ seemed like slough

11/4/03

from 4-6' (1y 1-2" of recovered sample)
T141 6-10' section ~2" recovered. Stained slightly clayey silt, gravelly, Lt grey, odor, moist, smooth & plastic. ——— yn
+yn CRA is sampling this section for VOCs, pH, TOC, PP metals etc. ——— yn
Note: The driller mentioned that the screen for VP-4 at 11' bgs instead of 10.5' bgs
1200 Stop drilling at bgs. Take a lunch break before proceeding. ——— yn
T210-1240 Lunch break. ——— yn
240 WESTON Back on site. CRA is already back on site. Drillers are not on site yet.
1248 Drillers back on site. ——— yn
309 Per Walt of CRA, they will not be collecting any treatability study samples from VER-1 because the soil cutting is too wet (slurpy soil)
1310 Resume drilling (stopped earlier at 14' bgs)
1314 At ~17-17.5' bgs. pulling out 4¼" augers out; They will go back down w/ ~~8¼~~" auger to install a VER well (4") at VER-1. ——— yn
Note: The soil cuttings were to be collected for soil stability test. Due to the heavy rain over the weekend, the surface section is ~~very~~ yn saturated ~~in the~~ yn on the site property. CRA might come back later this week to collect the samples when the water has settled. ——— yn
319 All the smaller diam (4 & 4") augers are pulled out. In the borehole, at ~1' below surface, water is draining horizontally & down the well. ——— yn

The flow rate ~ a few gallons a minute. yn

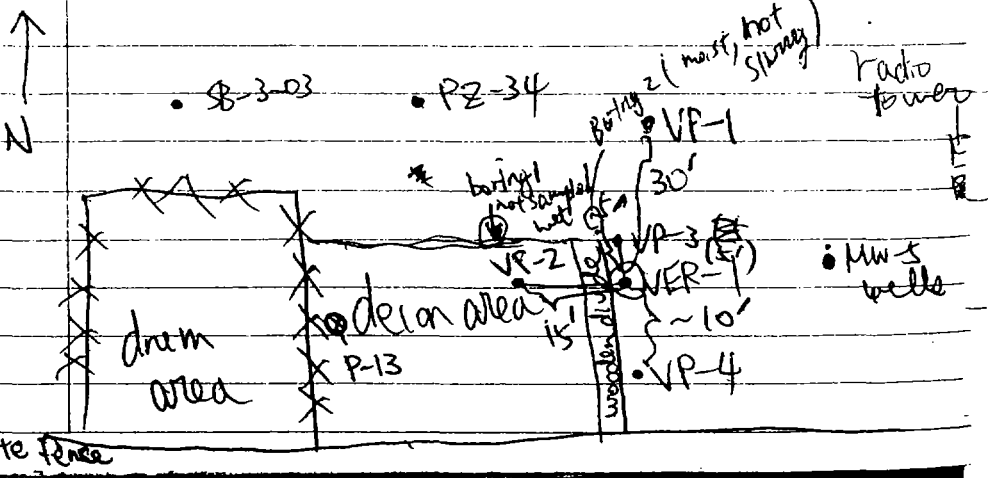
1340 Phoned Om Patel to let him know that the GW sampling will start at 1000 on Monday, November 10th. Om asked whether ~~it~~ yn Hagiwara thought it necessary to go west of PZ-38 location to further delineate the extent of LNAPL. Hagiwara thought that it would be good if possible however, it ~~does~~ yn appears that the access may be a problem due to the property wall & the oil pipeline. It would be difficult to install another boring between PZ-38 & the oil pipeline

1341 The drillers have started drilling w/ a larger auger for well installation Walt P. & Sarah Benovic went back to Tameling property to mark out the VER-2 area. yn

Weather: Sunny Temp ~ 70°F, very slight breeze some cloud. yn

14 Walt Pochron off site.

Rough sketch of VER-1 area



VER-1 11/4/03

1412 Walt Pechan off site. ——— JH

1415 Done drilling at VER-1. At 17' bgs.

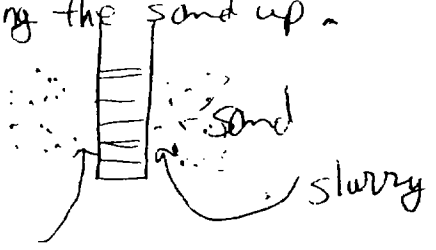
1420 Decontaminating PVC screen 10' &
PVC riser 10' for VER-1 well. The
casings are both 4" diameter. ——— JH

1429 Pounding the auger fork to clear the
boring for screen. ——— JH

Weather: Thick cloud over the area. Darker
& cooler ~60°F. No sun. ——— JH

1455 Still Installing the well. ——— JH

1505 The well is stuck (~~they~~ having a problem
w/ sand locking the auger). They have added
~3 gallons of water earlier but the bottom
slurry is to thick & not settling out so
when the auger was pulled out, the
slurry filled in ~~from~~ the inside of sand
displacing the sand up.



1515 They are going to try flushing the
slurry down. Moving the water truck
closer to the rig. ——— JH

1530 The flushing tactics did not work. Pulling
out the well (screen + riser). ——— JH

535 The well is out. Drilling back down.

1542 Trying to flush out the slurry from the
borehole before setting the well back down

1602 The water truck is out of water. They
are going to re-fill the tank. ——— JH

1636 Drillers back on site w/ water tank
filled. ———

11/4/03

1647 Flushed out iside the auger & pulled the auger out.

1650 Putting a cap at the bottom of the auger (plug).

1658 Drilling back down w/ an open auger (w/o the plug)

1714 ~16.5' bgs. ~~Flushing the auger~~ Filling water inside the auger. Leave this overnight for it to settle.

1720 Done for the day. Will meet at 0700 tomorrow morning.

Yoshiki Eguchi

Oversight – VER Soil well installation

U.S.I. Y. Hagiwara 11/3/03

703 WESTON on site.
Drillers are already on site, working.
Weather: Cloudy ~39°F at 0650. High expected ~48°F.
CRA is not on site yet.

Personnel on site: Sarah Benovic (CRA)
Wess Inhoff (Boart)
Leon Grosskreutz (Boart)
Yoshie Hagiwara (WESTON)

714 Sarah of CRA on site.
719 The drillers have already set the auger w/ the plug this morning. Trying to get the plug off the bottom.
It appears that this area also received some more rainfall overnight. The site is pretty well flooded this morning.
744 Screen bottom set at 16' bgs.
It appears that ~1" (>1") of rain precipitated overnight.
0807 Problem w/ setting the well VER-1 again, they will try flushing w/ water again.
Sand pack = ~~5~~-16' (~5.2-16')bgs.
Bentonite = ~~4-5~~ 4-5' bgs
834 At VP-1 (30' away from VER-1)
0854 Still getting ready at VP-1. ~~Problem~~
There was a problem w/ starting the rig. It is solved.
857 Start drilling at VP-1.
They will drill down to ~11' bgs (blind drill).
Late Entry: Surveyors came on site @ 0853.
918 Still drilling at VP-1 ~10' bgs.
Wind is picking up.

VP-3

0943 At 11.5' bgs. The soil cuttings appear very dirty. Lt gray clay, strong odor. wet.

0946 Decontaminating 5' PVC screen and PVC riser prior to installation.
Screen = 6–11' bgs
Bentonite = 4–5' bgs
Cement-bentonite = 4 ~~and 5~~ - sw
~3 gals of water was added to the well.
Sand = 5–12' bgs

1031 Packing up at VP–1. Getting ready to move to VP-3.

1035 At VP-3, setting up.

1040 Start drilling (blind drill) at VP-3.

1109 At 12' bgs. Dirty oil wet stuff @ 11' bgs. Very dark / black w/ sheen & strong odor. The soil cuttings are ~~dry~~ moist but not wet, for the most part Lt yellowish brown gravelly sand, the color changes into Lt grey.

1138 Per driller, ~150 gals of water was to have been used during the installation well VER-1.

1141 Asked CRA if she has calibrated a PID today. No. Since she is not planning on sampling today, she ~~didn't~~ did not calibrate her PID. ~~When she~~ In response to a regarding the breathing zone, she is not on monitoring today at all although it expected that VER-2 area is ~~the~~ near the center of the plume. She has not breathing zone monitoring for ~2 days.

Photo	Date	Time	Description
19	11/5/03	0931	VER-1 [illegible]
			[illegible] cement-bentonite seal at the top. [illegible] will provide [illegible] the well.
20	11/5/03	1126	Setting a one-inch well at VP-3 (vacuum monitoring point).
21	11/5/03	1341	Drilling at VP-3.
22	11/5/03	1419	Oil is coming up from VP-3.
23	11/5/03	1421	D. brown product floating on top.
24	11/5/03	1627	Tremie grouting cement-grout at VER-1.
25	11/5/03	1639	Finished VP-3. ~~The~~ The boring is cement-grouted at the surface.
26	11/6/03	0841	CRA is collecting soil stabilization test samples.

Joelle Nagumo

VP 3 11/5/03

Sarah does not think that it is necessary to perform breathing zone monitoring since she does not think the breathing zone has been that bad. ——— yr

VP-3
Screen = 6-11' bgs
Sand = 5-12' bgs
Bentonite = 4-5' bgs

1206 Done at VP-3. Cleaning up at VP-3 area.
1215 Moving to VP-2. ——— yr
1220 CRA & drillers off to lunch. ——— yr
1225 WESTON (Hagiwara) phoned Om Patel to double check that air monitoring is part of the HASP w/ CRA. Sarah of CRA has not performed any breathing zone monitoring today or calibrated PID. Phone conference w/ Om & Walt of CRA regarding this matter. Walt will speak to Sarah about air monitoring. ——— yr
1240-1250 Lunch. ——— yr
1250 Hagiwara back on site. CRA or the driller are not back on site yet. ——— yr
1258 Drillers back on site. ——— yr
1302 Sarah of CRA back on site. ——— yr
1320 Start drilling at VP-2. ——— yr
Late entry: Surveyors came back on site @ 13:
Sarah of CRA is also performing breathing zone monitoring. Sarah has calibrated HNu & Datarams for monitoring purposes. ——— yr
1324 The auger drilled through a layer below gravel at ~1' bgs. Water is draining in horizontally below the lining. Very wet below the liner. ——— yr

VP-2 11/5/03

1327 There appeared to have been a problem w/ the battery for Data-Ram (low charge). Sarah changed the battery. —yn

Weather: Same as this morning, ~~very misty~~ cloudy temp ~40°F. Damp. Not raining though. Not much wind at 1330. —yn

1335 ~5' bgs. Soil cuttings core coming up as a light yellowish brown slurry. Strong odor. —yn

1338 ~ 8' bgs. —yn

1343 At ~ 11.5' bgs. —yn

1345 Decontaminating sleeve/riser (1" PVC) —yn

1353 The bottom of a spoon used to clean the borehole prior to installation of PVC pipe. —yn
The core has a strong odor, gravelly, grey (med), clayey silt. —yn

1359 Adding about 5 gals of water down VP-2. —yn

1420 PID reading in the breathing zone = 10 ppm, (not consistent reading, spike)

1440 Received a call from O'Patel regarding air monitoring. The breathing zone was monitored while the drilling was occuring. However, after 10 ppm spike was noted, Sarah went on to pull away the PID instead of keep monitoring for increased vapor (organic) concentration. ~~Em went to get~~ yn went on to a phone conference w/ Walt P. of CRA & Tom, mentioning that the breathing zone is not properly monitored. Walt will call Sarah to speak to her again.

1445 Back at the rig. Still strong odor.

1457 Most of the product has been containerized (oil) and therefore the odor is dissipating. —yn

VP-2 11/5/03

1500 Drillers are decontaminating the augers. ——— gn

Bentonite = 3.5–5' bgs ——— gn

Per Walt, the drillers will be cement-grouting ~~the~~ all the VP & VER wells that have been installed so far. ——— gn

1509 Sarah ~~for gn~~ conducted Draeger tube testing for vinyl chloride. It does not appear that vinyl chloride is present at VP-2 location. ——— gn

1521 Still decontaminating, and also preparing to cement-grout VP & VER wells. ——— gn

1550 Still decontaminating, almost done. ——— gn

1627 Tremie grouting. (cement-grout)

1640 Finished cement-grouting VP & VER wells. ——— gn

1650 Packing up. ——— gn

1657 Checked out the VER-2 area for tomorrow. The driller (Wess) thinks that the branches up higher may be an issue. Some of them may have to be trimmed off tomorrow before they can start work. ——— gn

1700 Loading some augers for tomorrow. ——— gn

1701 Done for the day. Will start again at 0700. ——— gn

1702 CRA off site. ——— gn

1705 ~~gn~~ WESTON off site. ———

Yvette Kaplan

Oversight - Soil Investigation
VER Pilot well installation 11/6/03

0655 WESTON on site. Drillers not CRA on site yet. —gz

Weather: Sunny, clear sky, sunrise @ 0636. ~35°F at 0630, high expected ~45°F

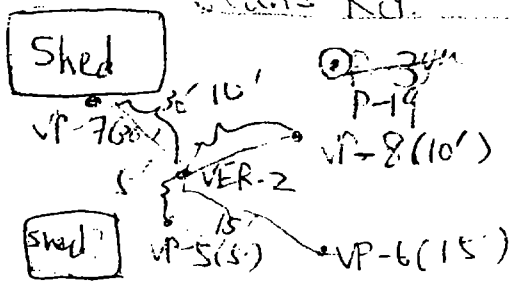
0705 Sarah of CRA on site. —gz

0718 Walt Pochron of CRA on site —gz

0725 Drillers on site. They seemed to have come on site & water level want to get some water. —gz

0800 Setting up at VP-8. —gz

Evans Rd.



0810 CRA is calibrating HNu at zero air & 100 ppm isobutylene. Also the DataRam. (DataRam at trailer). —gz
Drillers are almost ready to start drilling at VP-8. —gz

0815 Walt P. will be developing PZ-39, PZ-40 & RMW-6 while Sarah oversees the drilling.

0818 Start drilling at VP-8 —gz

Late Entry: Informed Om that CRA might continue work into the weekend (sat) depending on how quickly they can finish drilling. They have to finish this week.

0830 Walt Pochron is developing PZ-39. ~8' bgs. Soil cuttings so far appear to be weathered Dolomite Lt pale brown / Lt grey gravelly sand / silt. —gz

0838 8' down ~11' bgs at VP-8. Slightly moist Lt grey gravelly sand and silt. —gz

VP-8 / VP-5 11/6/03

0847 Resume. Will install VP well at 8'
Gasoline smell (slight).
Screen = 5.5-10.5' bgs
Sand pack = 10.5-4.5' bgs
Bentonite = 3.5-4.5' bgs

0915 Still at VP-8. Almost done at this location. Walt is developing PZ-40. Per Walt, there was ~9' of water in PZ-

0925 Getting ready at VP-5

0927 Start drilling at VP-5.

0929 ~4.5' bgs, soil cutting look slightly grey SIH/sand. Lt yellowish brown color.

0935 There appears to be a problem w/ HNu PID unit. Sarah is trying to troubleshoo

0940 Calibrating OVM 580B unit/PID.

0944 There seemed to be a problem w/ OVM unit. Per Sarah, the HNu unit is working. Strong gasoline odor and the soil cutting is coming ~~out~~ up.
Per Sarah, PID = 0 ppm on HNu.
Sarah is sampling 8-11' section for soil stability test.
The drillers is going to try and start the 5-wheeler while Sarah is sampling soil cuttings. The helper is working at PZ so that the stick up can be converted to a flush mount PZ.
It appears Walt P. is done at PZ-40. Per Walt it did not appear to have any product although some sheen was observed

0957 Resume work at VP-8. The soil cutting appears to be slightly moist, Lt grey, gravelly sand/silt.

VP-5 11/6/03

1004 Spoon from VP-5 ~12' bgs came up wet. Strong odor from the water. ——— gn

1005 Decontaminating screen & riser before installing the well. ——— gn

1024 Drillers are still installing VP-5. [illegible] at RMW-65. Walt Pochron is [illegible] at RMW-65. ——— gn

1028 Asked Walt if the [illegible] purge at VP-20 unit was calibrated this morning. He did calibrate it. ——— gn

1032 CRA is taking the 1st set of water parameters. (pH, Cond & Temp) ——— gn

1034 Collecting 2nd set of readings. ——— gn

(Measurement taken every 2 gals purged)

Lt. brown, clear water. ——— gn

1038 Took the 4th measurement. The parameters are stabilizing. The development appears to be conducted in accordance w/ work plan. ~~The~~ gn CRA is purging extra vol. just to make sure that the well is purged well. Still tinted water. (Brown). ——— gn

A total of 30 gals have been purged ~~at~~ gn from RMW-65.

1051 Back at VP/VER-2 area. Already done w/ VP-5 well construction. Moved to VER-2. Setting up. VP-5, well construction was

Screen = 5.5 - 10.5' bgs

Sandpack = 4.5 - 12' bgs

Bentonite = 3.5 - 4.5 bgs

1054 Late Entry: Walt Pochron mentioned ~~that~~ the YSI unit was not broken. The unit was not calibrated correctly. ——— gn

1056 Start drilling at VER-2. The core will be continuously sampled (w/ spoon) at this boring.

11/6/03

1054 0-2; ~3" recovered. A piece of rock fragment at the bottom of the spoon. Dark, organic brown silty soil moist, no odor. gn

1108 2-4; ~3" recovered, SAA to ~ top 1" and into weathered bedrock, chunky, sandy/silty gravel, Lt tan calcite/limestone piece of rock fragment was stuck at the bottom of the spoon. gn
No obvious staining. Soil cuttings ~~are~~ gn
are slightly darker shade of yellowish brown gn

1114 4-6; 50 for ~~0.2~~ 2" - blow count

1116 4-6; No recovery. a piece of rock fragment was stuck at the bottom. Slight odor on the bottom, gn
No odor from soil cuttings. gn

1125 6-8; ~1" recovery, moist med yellowish brown ~~clayey~~ silt, gravelly. Another piece of rock fragment stuck at the bottom, no odor.

1135 8-10; 50/1 0-2" gn
Only ~2" recovered. Gravelly sandy material. CRA is sampling for microbial enumerations, pH, Orthophosphate etc. gn
Fresh piece of dolomite at the bottom.

1137 ~10' bgs, scraping ~~on~~ on the bedrock or something hard. gn
Still Lt brown (yellowish) gravelly sand is coming up in the soil cuttings.

1140 Stop here (~10' bgs) and take a lunch break gn

1150-1250 Lunch break gn

1250 WESTON back on site. CRA drillers back on site. gn

Photolog Camera 1 11/6/03

Photo	Date	Time	Description
1	11/6/03	1126	Drilling at VER-2. CH2M Hill air monitoring.
2	11/6/03	1337	Collecting soil samples from VER-2 soil cuttings.
3	11/6/03	1634	VP-5 : VER-2 (left corner) facing North.
4	11/6/03	1634	VER-2 (left) of VP-5 (right), facing N-NE.
5	11/6/03	1657	Setting well VP-7.
6	11/7/03	0826	Done at VP-6.
7	11/7/03	0939	Proposed PZ-41 location. The area is filled. The original boring location would have been under the water due to the heavy rain.
8	11/7/03	1110	Finished PZ-41.
9	11/7/03	1336	VER-1 area. Set up at a boring for soil treatability samples.
10	11/7/03	1336	Decon pad in VER-1 area. Facing North.

Yadira Noguera

VER-2

1312 Checking for water at VP-5. [illegible]
muck at the bottom.
1320 Resume at VER-2.
(Resume drilling).
1334 Problem ~~with~~ drilling down to 10'
They are going to try using a different
bit. Pulling out the augers
1347 Resume after changing the [illegible]
The sampling interval was ~ [illegible] bgs
1407 CRA is collecting some more soil
soil stability / treatability test [illegible]
Int'v (~10-12' bgs). Lt grey [illegible]
brown gravelly silty stuff.
1413 Pulled out the auger again [illegible]
of gravel, sand & A cave-in
the bedrock were dislodged
bottom of the auger.
1428 ~14' bgs. CRA is collecting [illegible]
soil cuttings for soil stability
studies.
Lt grey, gravelly stuff
weathered bedrock). Go[illegible]
1432 Resume drilling at VER-[illegible]
1434 Leon of Boart offsite. [illegible]
at 1405.
1449 Switching 4 1/4" augers to 6" aug[illegible]
Wet at ~8' bgs. Some water came
auger.
Strong odor.
1453 Matt is getting ready to go
ship samples from the office.
CRA will try and set this well at 15' bgs
1500 From the bottom of the auger ~ 17' bgs

VER-2 / VP-7 11/5/0?

a pieces of contaminated ... came out, moist, med gry w/ odor. — yn

1521 Walt Pochron off site. ——— yn

15-yn Late Entry Scott of ... on site to ... vessel at 1510. ... went off site at 1520

-1549 Screen at 5.5-15.5 / bgs

Sand 4.5-- ~~5~~ yn /16.5 bgs

Bentonite 3.5 - 4.5 / bgs

1618 Done at VER-2 - Moving to VP-7

1630 Start drilling (blind drill) at VP-7 — yn

1637 ~5' bgs. ——— yn

1647 ~10' bgs. The soil cuttings are looking Lt to Med grey - weathered bedrock, gravelly sand silt. ——— yn

-1648 At 10.5' bgs - Getting ready to set the well. ——— yn

Screen = 5.5 - 10.5' bgs

Sand = 4.5 — 11' bgs

Bentonite = 3.5 - 4.5' bgs

The soil cuttings have very faint odor.

1655 Setting the well VP-7. ——— yn

1704 Gasoline odor in soil cuttings noted, not that strong. ——— yn

-1715 Getting dark ——— yn

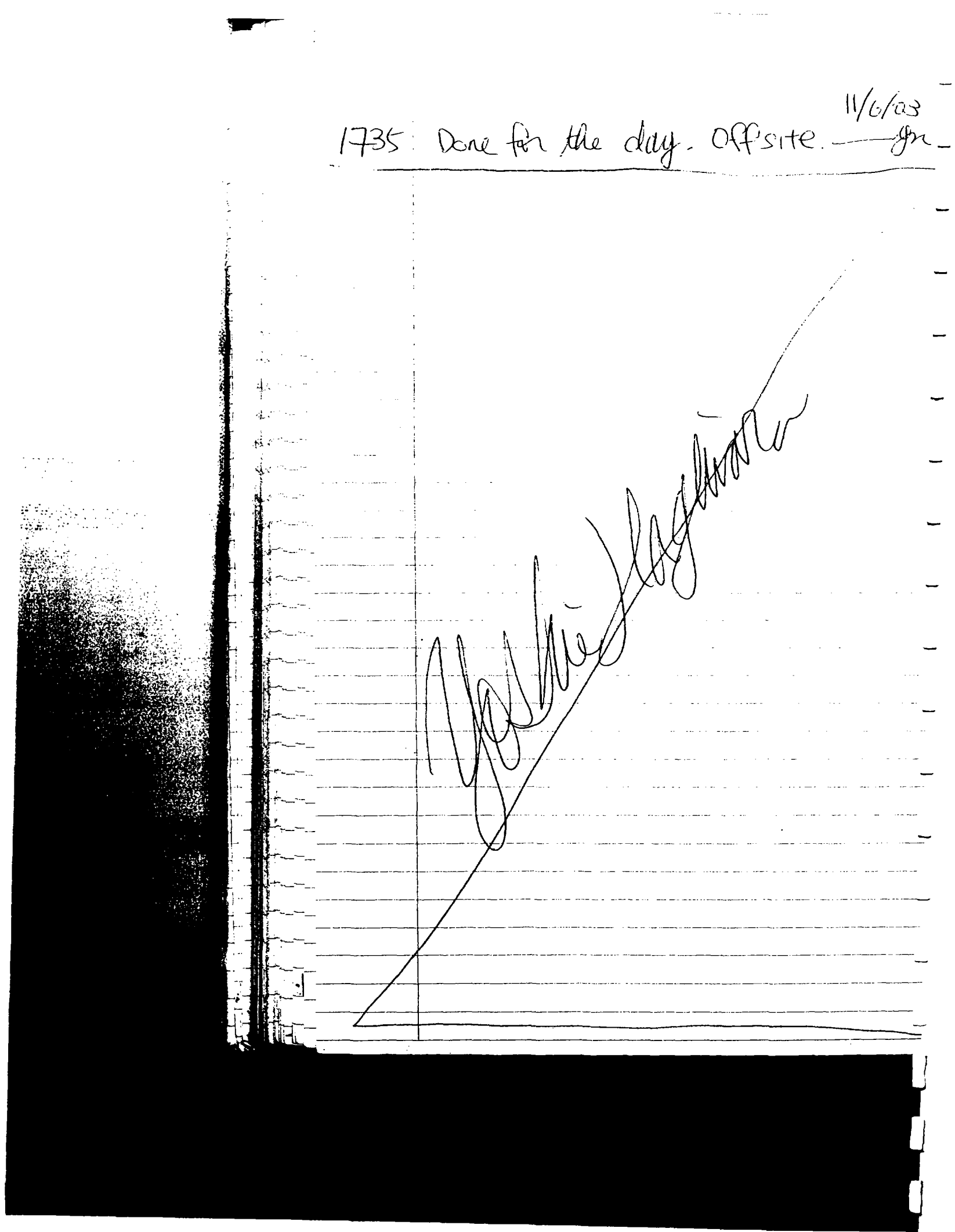
Scott Schwerin - helper's name

1723 Asked CRA Sarah what time she was planning on starting tomorrow. She is planning on being on site at 0800. Drillers will be starting earlier tomorrow and finish decon & cement-grout the VP locations that need to be cemented(?). ——— yn

-1730 Done at VP-7. Packing up. ——— yn

11/6/03

1735 Done for the day. Offsite. —JR



Oversight - Soil Investigation

Y. Hagiwara 11/7/00 ~~11/6/00~~

0655 ~~0755~~ 0755 WESTON on site. Drillers are decontaminating. CRA is not on site yet. Weather: ~32°F at 0700. High expected ~43°F Clear & sunny. ——— yh

Personnel on site:
Mike Mueller (Boart - Driller)
Scott Schwerin (Boart - Helper)
Sarah Benovic (CRA)
Yoshie Hagiwara (WESTON)

It was tasked Overnight. ——— yh

0823 Drillers & WESTON on Tameling property. CRA is not on site yet this morning. ——— yh

Drillers are setting up at VP-6 location.

0827 Sarah of CRA on site. ——— yh

0835 CRA is calibrating HNu & DataRam.
HNu - zero air & 100 ppm isobutylene
DataRam - Fresh air ——— yh

0837 Start drilling at VP-6. ——— yh

0857 At ~11.5' bgs. The soil/cuttings have gasoline odor. ——— yh

0903 Setting well at VP-6. ——— yh
Screen = 5.5 - 10.5' bgs
Sand = 4.5 - 11.5' bgs
Bentonite = 3.5 - 4.5' bgs

0925 Done at VP-6. ——— yh

0940 At PZ-41. Getting ready to drill. ——— yh
Per Sarah of CRA, the plan is to start sampling (w/ spoon) at 2' bgs ~~yh~~. This should be fine as we know that the top 2' (at least) is fill (definitely b/c at Pete Tameling). This boring would have been under water if it had not been filled.

0958 ~~0-2' ... yh~~ 0-2 - Not sampling
2-4' ... recovery - fill (still in fill)

11/7/05

1002 4-6' very soft & wet. ~ 1" recovered [illegible] coffee brown silt

~~1003~~ & (Sand - fine)

1005 CRA is going to blind drill to ~40' Getting into WX bedrock at ~6' bgs.

1016 CRA is checking to the water level (at the surface in the wetland next to PZ-41 location) ~ 8" of water.

1015 Almost at 10' bgs, Med brown slurry is coming out of the boring.

1033 At ~ 13' bgs. Getting ready to set Pz. No odor is noted in the soil cuttings.

1036 Adding ~ 10 gals of water down the boring before installing the Pz.

1057 Setting the piezometer at PZ-41 location
Screen at 2-12' bgs
Sand = 1-13.5 bgs
Bentonite = 0.5-1' bgs

1110 Done setting Pz at PZ-41.

1111 Drillers are putting a cap/compression lock on the ~~well~~ Pz.

Packing up at PZ-41.

1134 Moving drums.

1148 Mixing cement for grouting.

1155 Cemented ~~bent~~ UP & VER wells at VER-2 area. Sarah was off site to pick up lunch for the drillers.

Drillers will take lunch.

1155-1205 Haguruma off site to pick up lunch.

1220 Topping off the cement grout.

1228 Loading up used augers etc.

11/7/03

1252 Setting up in the VER-1 area to drill back down to obtain some soil cutting samples for soil stabilization treatability test. ——— gz

1257 Start drilling (no name). The soil is saturated. ——— gz

1306 Stop drilling at 9' bgs. Pulling out of this boring. No sample was collected. ——— gz

1316 Moving to another location. ——— gz

318 Start drilling ——— gz

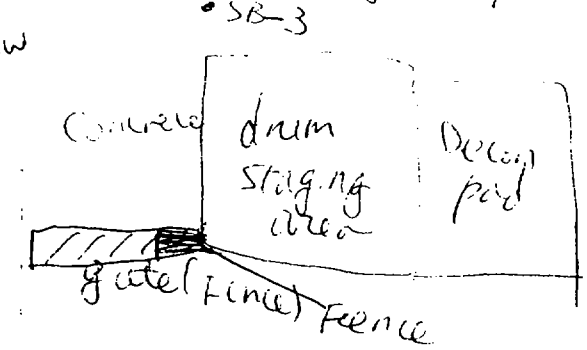
1335 Bit broke off (nail) at 5.5' bgs. Moving over 2 feet and will drill.

337 Start drilling. ——— gz

1351 Still drilling. Scraping 4.5 - 5' bgs

358 Moving to ~~another location~~ a different location again. ——— gz

1404 Per Walt Pachron, moving over to the other side of the gate area to collect treatability study samples.



1416 Entry: Sarah & CRA went off site 1245-1355 to pick up ice. ——— gz

1410 Setting up at a new boring by the gate area. Helper is decontaminating the augers.

1416 Start drilling. ——— gz

1423 Saturated slurry came up at ~6' bgs.

11/7/03

Will move one more time and try again. ——— Jfer

1435 Moved To a location close to the radiator

1439 Start drilling. ——— Jfer

(Boring #5) ——— Jfer

~~1445~~ 1452 Refusal at 5.5' bgs. No samples were collected for soil stabilization/treatability test. Pulling out. ——— Jfer

1515 Decontaminating & getting packed up. ——— Jfer

1523 Done at the site. Off site. (CRA & Drillers are still on site finishing up decon, loading up & cementing all the flush mounts)

1/10/03

1000 Weston on site. CRA not onsite yet. Weather: ~32°F at 1000. High expected ~45°F light overcast.

1350 Personnel onsite: ——

Michael Castillo (Weston) ——

Survey Crew (2 personnel) ——

1100 Weston leaves site for lunch. ——

1125 Weston arrives on site. CRA already onsite. ——

Personnel onsite: ——

Sara B (CRA) ——

Wendy (CRA) ——

Christe G (CRA) ——

Calibration of YSI 556MPS unit completed at office prior to mobing (CRA) to site. Readings are included below; ——

pH = at 4, 7 and 10. ——

Spec Cond = 4.00 ——

ORP = 237.5 ——

Turb. Jmeter 4000P = 5.4, 5.0 compare

1200 CRA completes preparation for activities and sets up at G101L, D, and M for water measurements (recorded on p. 124-125)

124 125 Crew (CRA) preparing to leave Wendy onsite while Christe and Sara leave site for lunch. ——

1250 Wendy preps for Groundwater sampling

1315 Sara and Christe arrive onsite from lunch.

1320 Sara begins collecting water level measurements at the other wells on site. Results listed on pg. 124-125 ——

1350 Difficulties with mobile generator starting delays gwsa at G101M.

11/10/03

Well ID	DTW	TD	(Flow ml/min)	Water levels (screen vol.) ~~Comment~~	time Purge	Stable	Iron (mg/L)	Mn (mg/L)
G101M	18.31	23.60	500	✓	30	✓	ø	ø
G101D	17.60	40.49	360	✓	43	✓	2	ø
G101L	17.64	34.20						
P-26* ~~MW-1S~~	7.29	20.43	300	✓ [MS/MSD]	15	✓	4.5	ø
*P-28	3.85	12.65	400	✓	10	✓	1.0	ø
*MW-6D	5.32	23.35	360	✓	15	✓	3.4	ø
*RMW-6S	1.96	11.54	400	✓ [dup]	15	✓	ø	ø
P-16	11.64	21.33						
*P-24	5.47	15.28	390	✓ [dup]	20	✓	0.6	ø
*P-30	6.81	15.16	130	✓	25	✓	6.0	ø
*MW-5D	12.72	[illegible]	340	✓ [dup]	15	✓	-	-
*• (MW-5S)	10.71	~~10.45~~ ne	Sheen present [0.24]	-	15	-	-	-
*• P-14	10.30	~~11.55~~ ne	[1.25]					
*G106D	12.21	47.39	390	✓	15	✓	0.6	ø
*• G106L	10.49	13.40	[2.91]					
P-13	10.44	15.89						
* P-23	9.04	17.65						
P-15	Covered by Resurfacing gravel							
• P-01								
*• P-24D	~~5.22~~ 7.22	~~5.22~~	[2.0]					
* P-24S	3.93	12.81						
*• P-25	9.17	~~4.44~~ ne	[4.73]					
*• P-25S	4.5	~~3.91~~ ne	[0.59]					
*• P-20	10.70	~~7.87~~ ne	[2.83]					
*• P-19	14.8	~~12.77~~ ne	Sheen present [2.06]	-	10	-	3.0	ø
*• P-21	10.66	9.8	[0.86]					
PZ-33	10.39	17.52						
PZ-34	10.59	18.06						
2 PZ-35	9.07	17.90						
* PZ-36	8.54	16.72						
*37 PZ-~~36~~	4.62	15.50						
*• PZ-38	4.51	~~5.21~~* ne	[0.7]					

[signature] 11/10/03

11/10/03

Well ID	DTW	TD	LNAPL Thickness (ft)	mL/min Flow	Check drawdown	Purge time (min)	Stable	Iron	Mn
*PZ-39	5.19	--							
*PZ-40	4.56	12.30							
*PZ-41	4.73	13.15							
PO5	7.20	13.63							
PO6	8.87	12.35							
PO7	7.12	13.43							
PO8	7.06	11.91							
PO9	9.81	15.68							
MW-41D	11.40	---	MS/MSD	460	✓	21	✓	—	— 12
MW-4S	8.87	21.52	—	360	✓	30	✓	—	— 26
MW-1S	9.20	20.81	—	440	✓	20	✓	5.0	∅ 22
MW-1D	10.24	48.45	—	330	✓	15	✓	2.5	∅ 21
MW-2S	10.07	15.81	—	480	✓	35	✓	—	— 31
MW-2D	10.98	---	—	330	✓	13	✓	—	— 52
MW-8S	9.09	24.06	—	480	✓	30	✓	—	— 35
MW-104L	9.10	16.38							
MW-104D	4.19	10.54							
*P31	5.64	---							
P32	9.26	18.43							
MW-7D	17.00	57.68	—	155	✓	15	✓	—	— 33
MW-7B	17.32	35.20	—	300	✓	15	✓	2.5	∅ 24
*MW-35	7.70	23.80	—	380	✓	20	✓	1.5	∅ 23
MW-36	7.12	26.55	—	440	✓	35	✓	—	— 54
*G102S	10.14	17.20							
*G102D	10.98	23.50							
*G102L	9.98	16.70	—	250	✓	20	✓	4.7	∅ 41

1) Purge min: 3 volumes (Screen Interval)
2) Max allowable drawdown: 0.3' Bot
3) Wells not approached in this order
4) * LNAPL Detected During water level measurements
5) 0.24 - Thickness (ft) of LNAPL layer
6) * - water levels completed on 11/11/03.
7) Dup MS/MD - QAQC samples

8) --- TD not measured due to tube obstruction
9) (MW-5S) - sheen

11/14/03

11/10/03

1416 CRA measuring purging rate at (MW-1) = 300 mL/min. Using graduated cylinder. Also, CRA measuring drawdown effects of purging per Volume.

1446 Parameter Readings taken according to time. (4 mins/reading) approx. 1.2 L. Vol of screened interval in well.

Stabalized parameters;

TEMP ; ± .5° C

Cond ± 10 % µS/cm

DO ± 10% mg/L

pH .1

ORP 10%

Turbidity 10% or <10 NTU

Max Volume = 10 ~~gallons~~ Volumes

Pictures MC-01 ; YSI 556 during groundwater parameter stabalization.

Pic MC-02 ; YSI 556 casing, Turbidimeter, Manganese Test kit, Iron test kit, B... logs.

1456 As mentioned in MC-02, boring logs present on site to determine screened ervel.

Picture MC-03, Peristaltic pump with ... external power options, ded ... Graduated cylinder, ground ... volume collection.

pic MC-04; water level indicator during ... down measurements during purge pro...

pic MC-05, Oil/water interface probe

pic MC-06, Bucket, paper towel, DI water, Alcohol, Alconox.

11/10/03

[illegible] for dissolved gas/COD 11/10/03
pc MC-07; 45 micrometer filter in operation.
1540 CRA completes sampling at G101D
TCL VOCs, TCL SVOCs, TCL Pesticides, TCL Herbicides, TAL METALS, PCBs, Cyanide, alkalinity, COD(Total), COD(dissolved), TOC, ammonia(as nitrogen), nitrate, TSS, TDS, chloride sulfate, sulfide, natural Attenuation parameters.
1545 CRA running iron test on groundwater at G101D. Fe Ferrous Iron 0-10 mg/L ; Hach.
1. fill beaker 40 mL 2. fill zero cuvette 10 mL 3. break ampul (Iron), fill, invert, wait 3 minutes, compare color. ~ 2 mg/L
1550 CRA running Manganese test on gw at G101D.
1 fill beaker 2. add Buffer powder, Citrate type for Manganese Periodate Method. 3. add sodium Periodate to beaker, 4. compare color. 5. If pink color then manganese present.
*No manganese present (No pink tint)
pc MC-08; Used ampul (Iron).
1600 Begin GWS setup at G101M.
1620 Groundwater purge flow measured 500 mL/min Water level drawdowns are recorded. Water levels remain consistent with original readings.
1630 Stabilizing completes.
1710 Sampling complete. Iron = 0 mg/L Manganese = 0 mg/L

11/10/03

1715 CRA/Weston back at vehicles with samples and full buckets of waste water - To be filled in blue tank (onsite)
Talked to Sara (CRA) about what time to meet onsite she said 0700, —— by
1726 Weston offsite for the day. —— by

11/10/03

11/10/03

0715 Weston onsite. 1 CRA onsite. MC

0720 2 CRA arrive on site. MC

Personnel: Castillo (Weston), Sarah (CRA), Wendy (CRA), and Christie (CRA).

Weather: 51°, Heavy overcast. MC

Forecast: Hi 55°, Showers. MC

CRA prepping equipment to continue groundwater sampling. MC

0740 CRA begins calibrating equipment including YSI 556 MPS and 2100P Turbidimeter according to values established on 11/10/03.

0810 CRA continuing prepping equipment. MC

0830 Groundwater sampling begins at MW-15 and MW-1D. Prep at wells begins MC

p.c MC-04; Groundwater disposal tank and mobile 5-gallon bucket with lid. Tank in onsite near 55-gal drum staging area.

0908 Begin purging, flow measurement (440 ml/min) and drawdown (2.10) MC

p.c MC-10; Low flow cell for groundwater stabilization. MC

0935 Groundwater is stabilized after ~3 gal. purged. MC

0950 Test for Iron and Manganese MC

1000 Begin sampling at MW-15. Samples are packed on ice. MC

p.c MC-11; Groundwater samples packed on ice.

1030 Purging, flow measurements and drawdown, Fe and Mn tests running while labels and bottles are prepped. MC

1100 Due to pump difficulties a second pump is still not available for simultaneous sampling

Mel Castillo MC

11/10/03

11/11/03

1105 Begin sampling at MW-1D. MC

1130 Sample bottle count = 22 including 6 1L Amber jars. Sample times are close average. MC

1200 Samples are packed on ice and Checked by CRA for proper labeling. MC

1230 Weston offsite to get lunch while equipment is packed MC

1300 Weston back onsite. CRA offsite for lunch

1320 CRA back onsite, Begin sample preparation at MW-3S, collect purge rate, drawdown and stabilization parameters MC

1350 Begin sampling MW-3S. MC
Calibration of 2nd YSI unit attempt unsuccessful. Two pumps running, One low-flow stabilization unit available.

1415 Purging begins at MW-3D. Purge rate, drawdown and stabilization parameters are recorded by CRA. MC

1445 Sampling (MW-3S) and purging (MW-3D) continues. MC

1501 Begin sampling (MW-3D). MC

1530 Bottle prep and sampling continue. MC

1540 Sampling complete at (MW-3D). MC

1556 Loading equipment in van nearly complete. MC

1600 Move to MW-6D to begin preparations of groundwater sampling. Prep on MW-6S also begins MC

1630 Stabilizing at MW-6D begins. MC

Visit 1650 WALT (CRA) arrives onsite to check up on status.

11/11/03

9/11/03

1120 CRA performs calibration of YSI unit #2.
Do not use today. Not necessary. Walt (CRA)
Fixed unit. Begin stabilizing MW-65

1730 Begin sampling MW-65. Sampling at this point will include one ~~MS/MSD~~ Duplicate
CRA says ~~MS/MSD~~ Duplicate will be analyzed for all parameters.

1300 Continue sampling at MW-65.

1830 Sampling complete at MW-65.
Weston offsite. for the day.

9/11/03

11/12/03

0820 CRA on site to continue groundwater sampling. MC

Personnel: Cashin (Weston) MC

Sarah, Christe, Wendy (CRA) MC

0720 Begin mobing to MW-8S and 2D. MC

0735 CRA begins calibrating two YSI stabilizing units according to procedures and guidelines referred to on 11/10/03. MC

0755 Begin recording purge rates, drawdown and stabilizing parameters at MW-2S. MC

0820 Begin sampling at MW-2S. MC

Purging, drawdowns, and stable parameters are recorded for MW-2D. MC

Sampling Begins at MW-2D. MC

0900 Sampling continues at both wells. MC

0930 Sampling complete at both wells. Mobing to MW-7D and MW-7S

0940 Begin recording drawdowns, purge rates and MW-7D. MC

1000 Begin sampling at MW-7D. MC

Purging, drawdown, and stable parameters are ~~B~~Monitored at MW-7S MC

1035 Sampling ~~Begins~~ continues MC at MW-7D. MC

1050 Sampling begins at MW-7S. MC

1120 Sampling continues at both wells.

1150 Sampling complete at MW-7D and MW-7S. CRA and Weston leave site for lunch. MC

1230 CRA and Weston back on site from lunch. MC

1250 After prepping equipment, sampling actuators begin at MW-4S and MW-8S.

11/12/03

11/12/03

1310 Purging, drawdowns, and stabilizing parameters are monitored and recorded. Walt (CRA) arrives on site to check up on activities and begin developing VER wells.

1350 Sampling begins at both wells.

1415 As sampling continues, Walt (CRA) begins developing VER-1 for purposes of clearing salt, will not monitor, will base purgeing on visibility. Walt also surges VER-1 by continuously running and lowering the whale pump.

p.c MC-12, whale pump.

p.c MC-13, VER-1 discharge.

1425 ~~1445~~ Stabilizing, purge rates, and drawdown is monitored at MW-4D. Sampling complete at MW-8S, continuing at MW-4S.

1430 Sampling complete at MW-4S. Continuing at MW-4D. Walt completes ~~with~~ developing at VER-1 and begins developing VMP 1 thru 4 with a peristaltic pump with purposes of cleaning the screen for VER test.

p.c MC-14, peristaltic pump at VMP-3 in action.

1520 Groundwater sampling and developing continues.

1600 Sampling complete at MW-4D.

1630 Castillo leaves site, CRA office, Walt remains to complete development.

Walt 11/12/03

11/13/03

0730 CRA onsite. Personnel includes Sarah, Wendy, and Christy. ——
Weston personnel: Ceshkie. ——
Weather: ~25° and rising, Sunny, windy.
TASK: CRA, Continue groundwater sampling
—— Weston: Oversight. ——
0915 CRA sets up sampling equipment at G102L. Calibration of 2 stabilizing units completed. Turbidimeter calibrated in office prior to field activities. ——
0935 Purging, drawdown, and stabilizing parameters are monitored at G102L. ——
0930 Purging, drawdown, and stabilizing parameters are monitored at P26. ——
0930 Sampling begins at G102L. ——
0945 Sampling begins at P-26. ——
1010 Sampling complete at G102L. ——
Sampling complete at P-26. ——
1110 Purging, drawdown, and stabilizing parameters are monitored at P-29. ——
CRAs Sarah and Wendy offsite to fill generator with gas and lunch. ——
1140 STABILIZING begins at P-29. ——
1200 Sampling begins at P-29. Sarah and Christy have been back for ~5 minutes.
1317 Sampling at P-29 complete. ——
1330 Purge, stable, drawdown is recorded at P-28. ——
1355 Begin to collect sample at P-28
1510 Sampling complete at P-28. ——
1630 Purge, Stable, drawdown at G126D. ——
Odor at this sampling point. ——
Petrol odor ——

11/13/03

1045 Sample collected at GW(?).
1130 CRA/weston are offsite for the day.

[signature]
11/13/03

11/4/03

0820 CRA onsite, ——————

personnel: Sarah, Wendy, Christy (CRA)
Castillo (Weston).

Weather: 30°, overcast, forecast: rain, 40s

0830 TBM: Completed Groundwater sampling at 3 final sample points.

0830 Calibration: YSI meter SSC according to methods detailed on 11/10/03.

0840 Purging, stability, drawdown monitored at MW-5D.

0900 Sample collection begins at MW-5D.

0940 Purging, stability, drawdown monitored at MW-55. Hose

NC ~~0950~~ Heavy, thick and dark sheen present in well creates difficulty and matrix integrity is compromised - CRA states that monitoring will not continue but purging will continue for an additional 15 minutes.

0955 Sampling begins at MW-55.

Baker TANKS were onsite to drop off 4000-Gallon VER secondary containment unit.

MC-15 p.c STAGING prep for 4000-G tank

p.c MC-16; 4000 Gallon Tank in place

p.c MC-17; Sheen on water from MW-55

1040 Sampling complete at MW-55

Post note: Walt (CRA) has been onsite since 0837 to oversee 5th activities for a few hours.

1030 Bucket of water with sheen contained in a 55 gallon drum

VER
NC 11/7/03

11/14/03

p.c MC-13, second 4,000 gallon tank set up next to VBR-2.

1030 Purge, stability, drawdown at P-19 begins

1120 Began when present in ground water at this sampling point. CRA samples.

1150 Sampling complete at P-19.

1215 Caught flight for week

11/14/03

Oversight - VER Pilot test

Y. Hagiwara 11/17/03

~~1205~~ 1250 WESTON on site.

1257 Speak to Walt Pochron of CRA. There is a change in the plan. They will complete the step test at VER-2, and then proceed to constant test at VER-2 before moving over to VER-1 area.

1303 Left a message for Om Patel regarding CRA's change of plan.

Personnel on site:
- Tim Ree (CRA)
- Walt Pochron (CRA)
- Tom Hobday (CRA)
- Yoshie Hagiwara (WESTON)

1314 Still setting up for test at VER-2 area.

1328 Taking water level measurement PZ-36.

1350 Still setting up for test.

1409 The name of the unit measuring flow rate / pressure & temp is Veloci Calc Plus by TSI. CRA will be measuring VOC concer using an FID MicroFID I/S by Phot (a rental unit from ~~photo~~ IE) and a PID - Photovac.

1414 CRA calibrating MicroFID w/ 100p methane. Photovac PID ~~with~~ was using a 100 ppm Isobutylene.

1426 Checking all the wells w/ FID. Al readings are 0 ppm.

1431 Asked if Lantec GEM500 unit wa calibrated (Landfill gas analyzer

Photo log ① 11/17/03

Photo	Date	Time	Description
1	11/17/03	1305	Collecting water level measurements at VP-5 (VMP-5) location.
2	11/17/03	1307	Set up at VER-2. —yn
3	11/17/03	1327	Pilot test set up at VER-2 area. —yn
4	11/17/03	1336.	Setting up P-20 to monitor the vapor pressure (vacuum). —yn
5	11/17/03	1556.	Starting the Carbon air vacuum unit. —yn
6	11/17/03	1612.	Checking initial vacuum at VP-8 location ~~Inch H2O unit~~ yn (Vacuum guage is measured in inches of water instead of inches of Hg).
7	11/17/03	1633.	Taking vacuum & water pressure readings at VER-2. Step one.
8	11/17/03	1638.	Collecting VOC & CO_2, methane data from the out flow of the unit. —yn
9	11/17/03	1641	Taking water pressure at P-20. —yn
10	11/17/03	1645	Checking the flowrate.
11	11/18/03	0842	CRA is calibrating FID.
12	11/18/03	0850	Redeveloping VP-8.
13	11/18/03	1158	Preparing suction tube for the vacuum unit. —yn
14	11/18/03	1202	Sending the suction tube down (will attach the connection piece on top). —yn
15	11/18/03	1247.	Testing set up at VER-2. area. —yn

Joshua Hogan

Y. Hagiwara 11/17/03

1445 Still trying to get the test started. Appears to be having a problem starting Carbon air unit. —YH

1453 Trouble shooting, on the phone w/ Tech support of Carbon air. —YH

1530 Still trouble shooting. —YH

1553 Problem fixed. There was a problem w/ loose jumper cable. —YH

1556 Started vacuum unit. —YH

1558 There appears to be a problem w/ drawing a vacuum from the well all the way into the unit. —YH

1633 Taking vacuum/pressure readings Step 1.

Note: CRA is also monitoring the flow rate as well. —YH

1647 Going to Step 2. (Increasing vacuum

1650 Almost dark, still on Step 2.

1700 Going to Step 3. Per work plan, CRA will continue up to Step 25.

1720 Still step testing. —

1745 Still testing. —

1810 Still testing. —

1820 Two more steps to 25 steps. —

1821 Step ~~24~~ 25 —

1834 Step ~~24~~ 25. —

1838 Measuring DTW at VP-5. No water is present. CRA is suspecting that WX bedrock is clogging this VP well up. Similar conditions is expected VP-6. The pressure has not been changing at these two locations although water is being drawn fro VER-2.

Y. Hagiwara 11/17/03

1842 Step 25. ——— Yh

1850 Stop testing. ——— Yh

CRA is taking DTW at MW's / PZ's ~~Secu~~ Yh securing the VER-2 & UP wells (& MW & PZ's). ——— Yh

1855 It appears that CRA is not taking DTW at MW's & PZ's. Just securing them for the night. Packing up instruments & equipments. ——— Yh

1910 Change of Plan. The test at VER-2 area did not go well. They are going to check VER-1 tomorrow and will set it up if the wells are not too clogged up. ——— Yh

1920 WESTON off site. CRA is still on site packing up. ——— Yh

Yasuhiro Hagiwara

Oversight – VER Pilot Test

VER-2 Y. Hagiwara 11/18/03

0705 WESTON (Y. Hagiwara) on site.

0708 CRA Tom & Tim on site.

Weather: Raining, 1 plus inches of rain was expected overnight.

High expected ~63°F. ~60°F at 063-

0722 Walt Pachron on site.

0730 Checking wells VP-5, VP-6 & VP to see if any pressure would buildu using an air pum (bike pump). Pressi built up at VP-5 & VP-8. No pr built up at VP-6. VP-6 appears to conductive.

0750 VP-5 does not have any standin water where the cement sank (all the other wells have some stand water). VP-8 is holding pressu VP-5 holds pressure partia but not very right (seal), VP-6 does not hold pressure.

Personnel on site;

Tim ~~Reed~~ Ree (CRA)

Walt Pachron (CRA)

Tom Hobday (CRA)

Yoshie Hagiwara (WESTON)

0757 CRA is calibrating PID, FID & Landfi gas analyzer (GEM 500). All the instruments are the same as yest (see 11/17/03 log for details). PID was calibrated using 100 pp isobutylene, FID w/ 100ppm methan GEM500 w/ 30% CO_2 & 50% G

0818 Finished redeveloping VP-5. CRA ad ~3 gals of distilled water & extracte 1.5 gals.

11/18/05

The bottom (TD) is at 13.2' TOC at VP-5. It was ~11' before redevelopment. Purge water was murky w/ some product at the top (towards the end). ——yn

0830 Phoned Om Patel to ask him about time commitment & give him an update of what is happening at the site. Per Om, no more than 8 hours a day will be spent for this oversight task unless there is some critical work going on at the site. ——yn

0860 CRA will check for the pressure (after the wells are redeveloped) and see if it is worth running the test (step or constant). ——yn

0900 Tom of CRA offsite to get some more distilled water for well development. CRA is going to redevelop VP-7 as well before resuming any test.

0935 Raining ~~hard~~. Still waiting for Tom to get back. ——yn

0950 Tom of CRA back on site. ——yn

0955 Adding water to VP-7 for redevelopment. CRA engineering crew is preparing for test at max vacuum (quick check) to determine if it is worth it to run the test at this location. ——yn

1017 Redeveloping VP-7. ——yn

If the initial test/check works, CRA will proceed to re-perform step test before starting on constant rate test. ——yn

11/1/03

CRA will not be monitoring for [illegible] on discharge b/c they collected [illegible] data last night.

1023 Taking initial readings before starting.

1039 After testing for vacuum, CRA found out that the water was coming up above the screen once vacuum was pulled. Water level was fine b[illegible] the start of the test yesterday (below the screen).

1050 Waiting for water level to stabilize after the quick vacuum test.

1100-1130 Lunch.

1135 Back at VER-2 area. Taking DTW before starting the step test. Will use a suction tube set at [illegible] water table.

1137 Phoned Om Patel & gave him an update of what is going to happen

1155 DTW at VER-2 = 12.2' TOC. Will set the suction tube at ~14' TOC

1206 The VER-2 well is ready for test.

1208 Start pulling vacuum.

1225 Will start the test (step).

1229 Having a problem establishing the zone of influence. They will increase the pump rate (vacuum)

1240 The vacuum generator unit Stopped.

1245 Restart the vacuum unit. Overheating could have been the problem. Pulling vacuum & water w/ slightly cracked athospheric inflow.

11/18/03

Per CRA engineer, this is necessary due to the unit not producing enough gas for the vacuum pump ——— yr
The gas (subsurface) needs to be displaced by the atmospheric air. ——— yr
301 Checking DTW at VP-5. DTW=10.56' TOC. ——— yr
306 The vacuum is at max, getting only about 5" of the zone of influence. Will keep pumping & see if anything changes. ——— yr
335 Still pumping. Discussing the plans. There is a chance that CRA will postpone ~~yr~~ this testing until later when the weather is drier. ——— yr
CRA suspects that there is not much gas in the void space due to heavy rain. ——— yr
343 Checking water levels to see if there is a cone of depression. ——— yr
VP-6 = 12.29' TOC
VP-8 = 12.11' TOC
VP-7 = 11.93' TOC
There appears to be a small cone of depression. ——— yr
58 CRA will stop here at VER-2. No point in continuing since no air ~~yr~~ is coming through (gas), just water. ——— yr
They will take DTW at VP & VER wells at VER-1 area. If there is 4' of exposed ~~yr~~ screen (above water table), they may perform another test at VER-1 however if not they will most likely stop pilot testing. ——— yr

11/12/03

1425 Checked DTW at VER-1 area there is ~10' of water in VER-1 well. It is most likely that they will not perform any further test 4th week

1425 Phoned Om Patel & informed him of possible turn out. Will give him an update when all the plans are finalized.

Waiting to hear the final decision CRA engineers are packing up at VER-2 area.

1440 2 Field crew are taking DTW measurements at MWs near VER area.

1445 It appears that CRA will not be performing any more work this week (pilot testing)

1455 CRA finished taking water level at MW-55, P-13, P-14, & P-6,

1458 Tim (the lead engineer) is looking at the DTW data to see if it is worth performing at VER-1 area.

1501 Field personnel are making a phone call to the program manager & technical manager to confirm that it is ok to stop pilot testing.

1530 Asked CRA (Walt) to give Hagin a call if the plan (to stop work) changes.

1540 Weston off site.

Madhu Hagiwara

Y. Hagiwara 11/20/95

0720 Leave to site —— yh

0808 Arrive on site. —— yh

0821 Discussing where to drill. The site is still pretty wet. The rig might get stuck in the mud. —— yh

0834 Setting up near VER-1, to the outside of the fence (grounds too soft) on site. —— yh

- Personnel on site:
  - Jeff Flaminio (Board Helper)
  - Paul Dickerson (Board-Driller)
  - Walt Pochron (CRA)
  - Yoshie Hagiwara (WESTON)

Weather: Partly sunny, some cloud to the west (thin layer). ~40°F. High expected ~68°F

0845 CRA took out PID. The PID (HNu) has been calibrated this morning. —— yh

- Note VER-1SS is the name applied to this boring

0854 H&S briefing before starting drilling. topics
- contaminants
- site history
- Hazards
- Utility

1205 Start drilling at ~~To~~ VER-1SS. CRA is monitoring breathing zone. —— yh

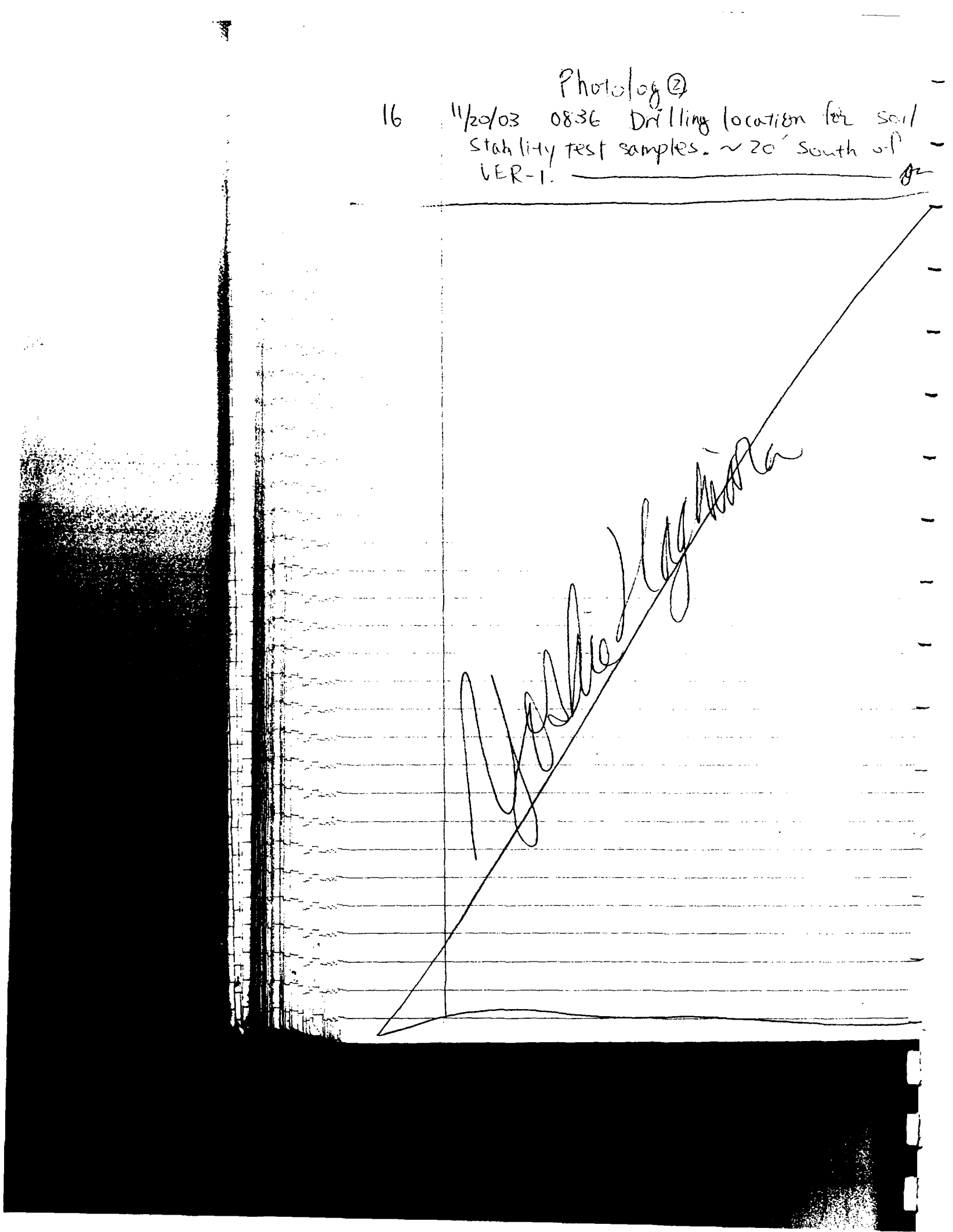
1207 Starting to get into hard rock/section at ~3.5' bgs. —— yh

Note Entry: Walt of CRA mentioned that he is planning on coming back onsite to check how quickly water would dissipate using DI water & a transducer.

0908 Pulling yh At 5' bgs. Pulling out of this location to see if any water is coming out along the bedrock! —— yh

Photolog ②

16 11/20/03 0836 Drilling location for soil stability test samples. ~20' South of VER-1.



11/20/03

0914 There is a lot of water running down the hole. Stop here. It is not expected that they will be able to collect ~~enough~~ dry enough sample near VER-1. ——— yn

1933 Packing up at VER-1SS. Walt Pechan is driving over to VER-2 area to check if there is any mess left from yesterday. Per Walt of CRA, he will start the test w/ DI water & transducer around 0730 tomorrow morning. ——— yn

1943 Pulled out of the VER-1SS. They are going to ~~dry~~ try decontaminating the auger in acidum (& spraying it off).

1948 Walt is opening the purge water drums to ~~dry~~ transfer purge water from the drums to the poly tank so that ~~he~~ yn CRA would have have any problems w/ bulged drums after the winter. ——— yn

2020 Done at the site. All equipments deconed & drillers off site. ——— yn

2115 Back at VHI. End of day. ——— yn

Yoshie Nagano

12/17/03

0820 Weston onsite (M. Pihl), CRA onsite - missing keys to site, having someone from office bring out another set.

Personnel Jeff, Tim (CRA)

Weather 25°, overcast, snow flurries, windy

0850 Late in taking water levels near fence & have to get cut in wells that don't need to be unlocked

0920 [illegible]

0950 CRA catching up on some paperwork

1015 Photo #1 - measuring water levels

1130 Weston, CRA offsite for lunch

1230 Weston, CRA onsite, resume taking water levels

1245 Reading SG1 in Des Plaines river

1300 Continue measuring water levels

1315 Photo #2 - decanning interface probe

1345 Photo #3 - decanning interface probe with LNAPL on it at P24

1415 Continue measuring water levels, none in LNAPL zone

1435 Photo #4 - oil on probe at G106L

1500 CRA not monitoring breathing zone with any instruments, decanning with DI water, Alcohol + Alconox; only one well had odor when opened (P24), others had no odors.

1510

1510 Weston offsite

Well ID	DTW	D.O.	T.D.	Comments
~~37~~	~~9.45~~			
P-33	7.66		17.35	soft bottom
P-34	1.54		17.59	soft
P-35	5.22		17.63	soft
P-36	5.16		16.72	
P-37	3.89		15.05	
P-38	4.53	4.83		
P-39	4.72		14.67	
P-40	3.79		12.18	
P-41	4.67		13.09	soft
P01	9.03	8.09		
P05	6.37		13.63	
P06	7.18		12.35	
P07	6.15		13.45	
P08	6.10		11.91	bottom soft
P09	9.11		15.70	
P13	7.10	15.26		
P14	10.96	10.06		
P15	8.67	mud on probe	17.44	
P16	10.97	21.34		
P-A	17.14	11.57		
P20	11.48	6.91		
P21	13.21	8.60		
P23	8.23		17.51	
P24	~~8.18~~	4.22		odor (pet.) from well
P24S	~~2.40~~	~~mm~~	12.51	DTW 2.10
P25	8.99	3.73		
P25S	3.40	trace	11.72	
P26	6.43		20.30	
P28	3.96			
P29	8.02		15.19	
P30	6.65		15.33	

WELL ID	DTW	DTO	TD	Comments
P31	4.74		12.41	
P32	8.42		18.47	
G101L	16.62		34.27	
G101D	16.67		40.98	
G101M	17.34		23.28	
G102S	7.24		17.24	
G102D	10.15		21.581	
G102L	7.09		16.71	
G104L	8.31		16.41	
G104D	~~17.07~~	4.03 10.60	~~47.35 16.60~~	
G106D	11.44		47.39	
G106L	13.22	9.50		
MW1D	4.56		48.04	
MW1S	8.14		20.80	
MW2D	10.20		45.59	
MW2S	9.14		15.55	
MW3D	6.34		47.42	
MW3S	6.55		21.52	
MW4S	6.55		21.73	
MW4D	10.48		45.59	
MW5D	11.92		49.38	
MW5S	9.79	9.76		
MW6S	1.73		11.54	
MW6D	4.64		~~29.39~~	45.96
MW7D	16.42		57.23	
MW7S	16.73		35.07	soft bottom
MW8S	8.20		23.71	
MW104L	8.31		1	
MW104D	4.03		10.60	
SG1	22.48			
VER1	9.65	~~19.10~~	19.10	
VER2	13.15	11.77		